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CONTENTS.

| | Page. |
|---|---|
| Importation of Foreign Iron Ores | 385 |
| The Petroleum Situation | 385 |
| Smelting in Southwestern Colorado | 385 |
| The New President of Lehigh University.....R. W. Raymond | 385 |
| The Situation in the Cœur D'Alenes | 386 |
| The Boston & Montana Report | 386 |
| New Publications | 387 |
| Books Received | 387 |
| Copper Assaying at Lake Superior.....G. L. Heath | 387 |
| Ward Mining District, Boulder Co, Colo.....W. E. Mead | 387 |
| Decision of the English Court of Appeals in the Cyanide Case, J. Noel Sparks | 387 |
| Treatment of Ores in the Cooney Mining District, New Mexico, Carl Andersen | 388 |
| Estimation of Tellurium in Copper Bullion.....Cabel Whitehead | 389 |
| Direct Treatment of Ores by the Cyanide Process | 389 |
| Auriferous Conglomerates in California.....Harold W. Fairbanks | 389 |
| Abstracts of Official Reports | 390 |
| Method of Determining Chromium in Chrome Ore.....Edmund Clark | 390 |
| *The Silver Mines of Thunder Bay.....Peter McKellar | 391 |
| Franz Posepny | 391 |
| Utilizing Gases From Coke Ovens | 392 |
| *Dry Crushing | 392 |
| Recent Decisions Affecting the Mining Industry | 393 |
| Patents Relating to Mining and Metallurgy. | 394 |
| Personal, Obituary, Societies, Technical Schools, Industrial | 395 |
| Notes: German Fuel Exports and Imports, 391—The Regulation of Coal Mines in South Wales, 392—Rapid Railway Construction, 393—Protecting Iron and Steel Against Rust, 393—The Ballestavy Iron Mine, 393—"Le Practicien Industriel," 393—Treatment of Antimonial Ores, 393—German Iron Production, 394—A French Substitute for Fire Brick, 394—A New Arrangement for Boring Rods, 394—Puddling Direct From the Blast Furnace, 394—Action of Nitrous Oxide on Metals and Metallic Oxides, 394—The Power Absorbed by Rope and Belt Transmission, 394. | |

*Illustrated.

| | | | |
|---|---|---|---|
| MINING NEWS. | Ontario..... 399 | CHEMICALS AND MINERALS. | Aspen..... 406 |
| Arizona..... 395 | South Africa.... 399 | New York.... 404 | San Francisco.. 406 |
| California..... 396 | Spain..... 399 | Valparaiso ... 404 | Denver... ..... 406 |
| Colorado..... 396 | | | Pittsburg..... 406 |
| Georgia..... 397 | LATEST MINING NEWS..... 399 | PETROLEUM.. 404 | Coal Stocks..... 406 |
| Idaho..... 397 | MARKETS: | | Ind. and Trust.. 406 |
| Illinois..... 397 | COAL: | MINING STOCKS: | Colo. Springs . 406 |
| Michigan..... 397 | New York.... 399 | New York.... 404 | Helena..... 406 |
| Minnesota..... 397 | Buffalo..... 400 | Boston..... 404 | Shanghai..... 407 |
| Montana..... 397 | Chicago..... 400 | Colo. Springs. 404 | Baltimore..... 407 |
| Nevada..... 397 | Pittsburg. ...400 | Salt Lake City 404 | Salt Lake City. 407 |
| New Mexico.... 397 | Shanghai..... 400 | San Francisco. 405 | London..... 407 |
| Ohio..... 397 | | London . ..... 405 | Paris ..... 407 |
| Oregon ..... 397 | IRON: | Paris ..... 405 | Mexico..... 407 |
| Pennsylvania.. 397 | New York.... 400 | Dividends..... 405 | Valparaiso ..... 407 |
| South Dakota . 398 | Buffalo..... 401 | Meetings..... 405 | Philadelphia.... 407 |
| Tennessee..... 398 | Chicago..... 401 | March Divid. 405 | CURRENT PRICES: |
| Utah ..... 398 | Pittsburg..... 401 | Assessments.. 405 | Chemicals ..... 407 |
| Washington.... 398 | Philadelphia.. 401 | | Minerals..... 407 |
| Wyoming..... 398 | | STOCK QUOTATIONS: | Rarer Metals... 407 |
| FOREIGN MINING NEWS. | METALS: | New York..... 406 | MINING Co's.... 408 |
| Br. Columbia... 398 | Gold & Silver 401 | Boston..... 406 | |
| British India.... 399 | Other Metals. 403 | Duluth..... 406 | ADVT. RATES. 18 |
| | | | ADVT. INDEX. 15 |

It is noteworthy that considerable amounts of foreign iron ores are being imported at Philadelphia and Baltimore. During the past five weeks over 35,000 tons have come into these two ports; 24,000 tons at Philadelphia, and 10,088 tons at Baltimore, besides 1,932 tons manganese ore from Chile to Philadelphia. The shipments are 18,500 tons to Philadelphia from Cuba, and 5,500 tons from Spain. Baltimore has received 7,238 tons from Cuba, and 2,250 tons from Spain. The heavy receipts of this ore show the increased activity in iron, and also that the increase in the price of Lake Superior ores, small as it has been, has been sufficient to keep them out of Eastern Pennsylvania and to permit the importation of the foreign material.

The sudden advance in the price of oil which we noted last week has been checked, and during the present week there has been a decline, the price reaching $2.10 on Tuesday with but little trading. Indeed, there has been but little speculation in the product since the advance began, as but a limited number of certificates have been on the market, and further, speculators have been in doubt as to what the next move of the Standard Company might be.

The work of drilling new wells continues, and a number of large purchases of oil land by the Standard Company are noted. The West Virginia field is being thoroughly prospected and some attention has been given to a new field in Wayne County, Kentucky, where some good strikes are reported. There has also been great activity in the Western fields, where several large producing wells are reported as having been struck recently.

As a result of the rise, many steam plants, which have been using oil for fuel, are arranging to return to coal. In Chicago the West Chicago Street Railway Company has advertised for bids for 200,000 tons of coal, as it anticipates giving up the use of oil at its steam plant.

## SMELTING IN SOUTHWESTERN COLORADO.

By dispatches from Denver we learn that the Omaha and Grant Smelting and Refining Company has leased the plant of the San Juan Smelting and Mining Company at Durango, and that the management has been placed in the very safe hands of Mr. Franklin Guiterman. This transfer will play an important part in the development of the San Juan region. The smelter which has been leased is one of the model establishments of Colorado, and the lessee is a large and very successful company long identified with the most progressive practice in Western lead smelting.

The reconstruction of the Rico smelter, the resumption of work by the pyritic smelting plant at Silverton, the continued operation of the two lead furnaces of the Standard Smelting and Refining Company at Durango, will, with the San Juan works, give southwestern Colorado an excellent market for its ores.

Matte smelting and its modification in the pyritic process have done much to encourage the operation of mines carrying ores unsuited to simple wet methods of reduction more especially in localities so situated as to make the ordinary railway freight rates prohibitory. While it is doubtful whether these small matting furnaces have been very striking commercial successes there is no doubt, but that the miner can afford to feel grateful to them in that they have checked the levying of excessive charges on the part of the larger central establishments at Durango, Pueblo and Denver, and they have in many cases permitted of the successful operation of mines which otherwise would have lain idle.

The increased ore production, which has followed the melting of the winter snows and the lowering of treatment charges due to animated competition among the smelters, has done much to energize the already noteworthy activity in Colorado mining.

## THE NEW PRESIDENT OF LEHIGH UNIVERSITY.

The trustees of Lehigh University, in electing to the presidency Prof. Thomas M. Drown, M. D., now occupying the chair of chemistry in the Massachusetts Institute of Technology, have done the best possible thing, not only for the wise and efficient management of the institution, but also for its fame and prosperity. For Professor Drown is, on the one hand, peculiarly qualified both by temperament and by training, for successful administration; and he enjoys, on the other hand, to an extraordinary degree, the esteem and confidence of a wide public of professional men and "captains of industry."

Professor Drown was graduated at the Philadelphia High School, and subsequently studied medicine and received the degree of M. D. at the University of Pennsylvania. After a brief period of practice as a physician, he turned to chemistry as his life-work, and studied, if I am not mistaken, under Gibbs at Cambridge, and Wöhler in Germany.

He subsequently established himself as an analytical chemist in Philadelphia, and removed in 1874 to Easton, Pa., to become Professor of Chemistry in Lafayette College. In 1873 he was elected Secretary of the American Institute of Mining Engineers, and retained that position by unanimous annual re-election until he resigned it, in 1883, to the universal regret of his associates. In 1885 he accepted the Professorship of Chem-

istry in the Massachusetts Institute of Technology, a position which he now leaves to become the President of Lehigh University.

His work as Secretary of the Institute and editor of the first eleven volumes of its Transactions deserved, as it received, the highest praise. His successor has been guided, in all essential particulars, by the admirable lines which he laid down. In 1879, during his term as secretary, the burning of Pardee Hall, at Easton, Pa., imperilled at once his valuable private library and the many hundred copies of the back volumes of the Institute Transactions, which were stored in that building. By great exertion he saved the latter, leaving his own library to total destruction. As the Transactions of the Institute have never been stereotyped, the loss of the early volumes would have been irreparable; and it is through the energy and devotion of its secretary that the institute is still able to supply complete sets of its Transactions from the beginning.

Professor Drown has done much, by personal investigations and by stimulating his professional colleagues, to promote the adoption of rapid, convenient and accurate methods of analysis, suited for commercial work. In recognition of these labors, and of his services to the Institute, he was elected in 1884 one of its honorary members.

For the last few years Professor Drown has been in charge of the chemical department of the investigation of the natural waters of Massachusetts, and methods for water purification, on which work some $250,000 has been expended by the State. The importance of its results has been universally recognized. The "chlorine map" of Massachusetts, prepared under his direction as the graphic epitome of thousands of analyses, is a brilliant illustration of the value of induction from accurate and adequate data.

R. W. R.

## THE SITUATION IN THE COEUR D'ALENES.

Since the closing down of the Bunker Hill & Sullivan mines in November last the situation in the Coeur d'Alenes has remained practically without change until the present month. Recently the stockholders of the Bunker Hill & Sullivan Company held a meeting in Portland, at which the question of reopening the mines was considered and the decision arrived at was, that if the company could have a reasonable guarantee that its business could be conducted without outside interference, and if the miners were willing to accept a moderate reduction in wages, which would compensate in some degree, although not to the full extent, for the fall in prices of lead and silver, work would be resumed; not only this but in addition development work in the mine will be extended, the shaft sunk deeper and a new concentrating plant put in. While no exact figures were made, the amount of wages spoken of was $3 instead of $3.50 per day for miners, and $2.50 instead of $3 for outside work. The company's decision was submitted to the people of Wardner, Wallace and vicinity, as well as to the miners, and it was pointed out not only that the reduction named was considerably less in amount than in the selling prices of the company's products, but that the rates offered were fully equal to those paid in the De Lamar mines, at Gibbonsville and in other districts of Idaho. Further, the rate at De Lamar is for a town distant from the railroad, where freights are much higher and the necessities of life more costly than in the vicinity of Wallace, which is reached by a railroad. The special point which the company, with perfect reason, insisted upon, was that it should be able to conduct its business without interference, since, without such a guarantee, it would not feel warranted in expending the money for the additional plant, or even in continuing the mines in operation at all.

The result of this action was not at all satisfactory. While some of the better citizens of the region were anxious that the proposition should be accepted, they seem to have been overawed hy the lawless majority, and the Miners' Union refused to permit any reduction whatever in the rate of wages. The Bunker Hill & Sullivan mines will consequently remain closed for an indefinite period, as there is no likelihood of a change in the present situation.

The action of this company has been in marked contrast with that of the Canyon Creek companies, and it is doubtless the cowardly surrender of the latter after the last outbreak, their acquiescence in the demands of the Union and the condoning of the Kneebone murder and other outrages which have brought about the present situation. In this it does not appear possible for any company or individual to conduct business in the Coeur d'Alenes unless they are willing to manage their affairs by the permission and at the direction of an irresponsible party which is dominated by the worst elements in the region. The condition of affairs there is shown by the fact that while the Bunker Hill proposition was under consideration a man, who is spoken of as one of the pioneers of the country and a quiet and esteemable resident in every way, was forced to leave his work in the Gem Mine by a committee of masked and armed delegates from the Union. That he was simply obliged to give up his employment and return home and that he was not murdered like the man Kneebone last fall, was due apparently not to any respect for the law, but simply to caprice, while the only reason given for the outrage was that the man had been characterized by somebody as a "scab."

As our readers know, we have always believed in the right—in many cases the duty—of men to combine for their mutual protection and advancement. Such a Union, however, as that of the miners in the Coeur d'Alenes has no fitting place in a civilized country. What is needed there is, as we have said before, sharp prosecution supported by physical force, the only argument which the leaders of the Union are capable of understanding; in a word, such a campaign as that in which the late Franklin B. Gowen broke up the Molly Maguires in the anthracite country over 20 years ago should be undertaken, and every law-abiding and self-respecting citizen of Idaho ought to support it for his own safety and for the credit and prosperity of his State.

## THE BOSTON AND MONTANA REPORT.

The Boston & Montana report for 1894, which was published in the "Engineering and Mining Journal" March 2d, is another example of that policy of secrecy which we have so often condemned as encouraging, if not leading to abuses, and sometimes even to dishonesty in administration. We had recently (October 20th, 1894) occasion to criticise the last report of the Tamarack Mining Company, because it gave no satisfactory information to its stockholders, and since the Boston & Montana Company is under the same control, and its last report is open to the same criticism, it calls for a special notice.

In the report of this company for the year ending June 30th, 1892, the quantity of fine copper in the matte and ore was given, and the amount per pound realized for the same, about 9·43 cents, and the price realized for silver was also stated. Against this was charged the running expenses of production, amounting per pound of copper to 6·09 cents, and all other expenses 2·18 cents, in all 8·27 cents per pound.

The Boston & Montana report for the 18 months, ending December 31st, 1893, and that for the year 1894 gave no such information, but lumped the gross receipts "from copper, silver and gold product from Butte and Great Falls," without specifying how much was sold. The report covering the 18 months, ending December 31st, 1893, gives, nevertheless, some data from which these amounts may be roughly estimated.

During these 18 months the Butte furnaces treated 99,305 tons, which the superintendent's report states contained "in matte and ore shipped" by assay 9·729 per cent. or 19,304,057 pounds of copper, 236,840½ ounces of silver and 513,350 ounces gold. The ore being richer than that of the previous year, which yelded 9·176 per cent. copper.

Since the trustees give their stockholders but little information, we have gleaned it from other sources; 232,325 tons of ore were shipped to Great Falls during the 18 months covered by the report, and 219,000 tons of this were smelted and gave an average return of 7·6 per cent copper, or in all 33,400,000 pounds. In addition to this the balance of the ore shipped, being the richest portion of it, averaging nearly 10 per cent. copper and containing about two and a half million pounds fine copper, was added to the stock at the works. At the close of 1893 this stock contained 6,585,000 pounds of copper. The mine, therefore, produced in the 18 months about 55,204,057 pounds, or an average yield of 8·32 per cent. in the ore, or in the calendar year 1893 about 36,800,000 pounds instead of 31,800,000 pounds, as officially reported.

If the ore sent to Great Falls contained on the average as much silver and gold as that smelted at Butte, it would have made about 780,000 ounces silver and 1,700 ounces gold, most of which is obtained in the electrolytic works, and should have contributed perhaps $600,000 to the gross receipts, the price of silver during that period having averaged 80 cents an ounce. The gross receipts are stated in the report at $5,078,725, of which, according to these estimates, about $4,478,725 was received from sales of about 52,704,057 pounds of copper, mostly electrolytic, or an average of about 8½ cents per pound. The average price of electrolytic copper during that period was about 10½ cents per pound, Lake having averaged about 11 cents.

These figures of quantity of copper produced, while not strictly official, are believed to be accurate; the price received for the copper, gold and silver are estimated because the report of the trustees do not give, as they should do, this information. It would be very natural and very proper that the stockholders should want to know why the selling price of the copper was so much below the market, for even if nothing were received for the gold and silver, and that the entire receipts came from copper, the average price would be only 9.6 cents per pound. Then, of course, the question would be asked, what became of the silver and the gold?

The cost of producing the copper (2,500,000 pounds, of which was mined but not smelted) counting the whole quantity mined as having been refined is given; for running expenses, Butte and Great Falls, freights and commissions, etc., $4,234,449.62, or 7·67 cents per pound on the total estimated output of 55,204,057 pounds. To this cost has to be added construction account, and interest and sinking fund on bonds amounting to $962,498.81, or 1·74 cents per pound, giving a total of 9·41 cents per pound as against an average gross selling price of 9·6 cents, leaving a net profit of nearly 0·2 cent per pound, or say, $110,000 on the total output in the 18 months. If the cost of smelting and refining the 2,500,000 pounds of cop-

per in ore, added to stock at Great Falls, be added to the cost, there would be scarcely any profit left.

The company's report for the year 1894 is still more mysterious than that for 1892-93, for it gives no information whatever concerning the quantity of copper produced nor of the price at which it was sold. It does, indeed, tell us, in the superintendent's report, that 188,972 tons of ore were shipped from the mine to Great Falls, but it says nothing as to its contents in either gold, silver or copper. One official statement has been made which places the output of the mine in 1894 at 35,700,000 pounds of copper and another, also official, statement puts it at about 40,000,000 pounds. Neither states the amount of gold or silver yielded by the ore, which, nevertheless, should have averaged, perhaps, 1·0 cent per pound of copper. If the output were 35,700,000 pounds and the gross receipts from copper, silver and gold, as stated in the report, were $3,630,526.96 it would be an average price received of 10·17 cents per pound, or 9·17 cents for the copper on the assumption that the gold and silver equalled 1 cent per pound of copper. If the larger official figure for the output of the mine (40,000,000 pounds) be more nearly correct, the average price received was 9·08 cents per pound, or perhaps 8·08 for the copper alone. The average market price of electrolytic copper in 1894 in New York was about 9·37 cents per pound. In either case it would appear that the price realized was below the market. Why?

The cost of producing is stated in the report as: "running expenses, $2,643,081.54," which would be 7·40 cents or 6·61 cents per pound of copper, as we take the smaller or larger official statement of production. But to this must be added "interest" and "sinking fund" for bonded debt, $272,781.66, which would equal 0·76 and 0·68 cent per pound of copper respectively, making a total cost of production of 8·16 cents per pound if the production was 35,700,000 pounds and 7·29 cents per pound if the production was 40,000,000 pounds, and a net profit of 2·01 cents, or 1.88 cents per pound of output respectively, including copper, silver and gold. On page 6 of the report it is stated that the stock of copper in ore, matte, and in treatment at Great Falls is now about 7,000,000 pounds (an addition of about 400,000 pounds during the year), and that it "will show a net profit of $407,000." This would be equivalent to 5·81 cents per pound against an actual net average profit of 1·88 or 2 cents per pound as above shown. There is nothing in the outlook of the present copper market or in the report itself to justify this official estimate of net profit.

We have gone into these details in analyzing this report because of the frequent inquiries we have received on this subject. The Boston & Montana stock is the most speculative on the Boston Exchange, and it is said to be heavily traded in by insiders, while the trustees of the company do not afford their stockholders the information necessary to enable them to determine whether the company is actually earning dividends or not, nor whether it is well and economically managed. It would have been a much more grateful task to have commented on these reports from full and reliable official data, but by using outside sources of information we have thrown some light on the subject. We hope the trustees will reply to these criticisms and furnish the facts we should have found in their report: we cordially invite them, or any of them, to do so. The names of the trustees are: A. S. Bigelow, president; A. W. Spencer, Franklin Fairbanks, Charles Van Brunt, Leonard Lewisohn, H. Wallerstein, Thomas Couch.

The mines, under the management of Captain Couch, appear to be in good condition, with four or five years' reserves opened. It is of course certain that the ore will become leaner here as elsewhere as depth is attained

The works at Great Falls, under Mr. Klepetko, are excellent, and no doubt do their part with efficiency and economy. We have evidence on both these departments outside of the reports of the company, and are satisfied that the reasons for concealing the facts in the business of the company are not at the mine, nor at the smelting and refining works of Great Falls. If the trustee's report gave the facts which their stockholders have a right to demand and require, it probably would not be difficult to locate the weak point, which it is, apparently, desired to conceal. The stockholders may take it for granted that there is always something to conceal which the trustees are afraid or ashamed to have made public when they resort to such mystifying reports as that under review.

## NEW PUBLICATIONS.

PRACTICAL INSTRUCTIONS IN QUANTITATIVE ASSAYING WITH THE BLOWPIPE. By E. L. Fletcher. New York; John Wiley & Sons. Pages, 142; illustrated. Price, $1.25.

The blowpipe is an extremely convenient means of determining the approximate composition of minerals for any one who has not a laboratory at command or is engaged in field work. Of course, the results can only be considered approximate, as, in the first place, the small amount of material which is used greatly multiplies errors, and, in the second, as careful manipulation cannot be given as in laboratory work. When in the field, however, the blowpipe is exceedingly useful, and the little volume which Mr. Fletcher has prepared is a convenient reference book for such work. In it he presupposes a considerable knowledge of blowpipe analysis, and does not make his explanations as full as might have been done, nor his arrangement of subjects altogether satisfactory. It is not, of course, as complete, nor can it take the place, of Endlich's work on Blowpipe Analysis.

## BOOKS RECEIVED.

**In sending books for notice, will publishers, for their own sake and for that of book buyers, give the retail price? These notices do not supersede review on another page of the Journal.**

*Monetary Systems of the World.* By Maurice L. Muhleman. New York; Charles H. Nicoll. Pages 198. Price $2.

*Geologic Atlas of the United States; Sacramento, Cal., Folio.* Washington, D. C.; United States Geological Survey.

*Motive Powers and Their Practical Selection.* By Reginald Bolton. New York and London; Longmans, Green & Company. Pages 257.

*New Jersey Geological Survey: Report on Water-Supply.* By Cornelius Clarkson Vermeule. Trenton, N. J.; State Printers. Pages 448; illustrated.

*Guide to the Yukon Gold Fields; Where They Are and How To Reach Them.* By V. Wilson. Seattle, Wash.; The Calvert Company. Pages 72, with maps and illustrations. Price 75c.

*Elements of Mineralogy, Crystallography and Blowpipe Analysis.* By Alfred J. Moses and Charles Lathrop Parsons. New York; D. Van Nostrand Company. Pages 342; illustrated. Price $2.

*Seventh Special Report of the Commissioner of Labor: The Slums of Baltimore, Chicago, New York and Philadelphia.* Washington, D. C.; Government Printing Office. Pages 620.

## CORRESPONDENCE.

We invite correspondence upon matters of interest to the industries of mining and metallurgy. Communications should invariably be accompanied with the name and address of the writer. Initials only will be published when so requested.
Letters should be addressed to the MANAGING EDITOR.
We do not hold ourselves responsible for the opinions expressed by correspondents.

### Copper Assaying at Lake Superior.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: In the article on page 369 of your issue of April 20th, second column, the sixth word of the tenth line from the top should read grams, not grains. G. L. HEATH.

SOUTH LAKE, LINDEN, Mich., April 22, 1895.

### Ward Mining District, Boulder County, Colorado.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: This district, one of the oldest in the State, discovered in 1860, is attracting the attention of mining men, and a description of it may be of some interest to your readers.

The town of Ward, about in the center, is some 9,000 ft. elevation, 10 miles from the backbone of the main range of the Rocky Mountains, and 20 miles from railroad at Boulder.

The district is altogether eruptive formation. The rocks are laurentian, and the ore iron pyrite, in quartz gangue, with some few chimneys found, in which the gangue is porphyry. The values, largely gold, are in lenses increasing in size and value with depth, although there are no deep mines in the camp. The deepest is 700 ft., and the next 400 ft.

The lodes are marked on the surface by silicious iron cap-rock, much of it porous or honeycombed by the oxidation of the pyrite, and assays well on the surface. In fact, much money was taken out of surface ores in an early day by stamp mills. These stamp mills were freighted on wagons across the plains in the old times before plates were used, when the gold was caught below the stamps in riffles or wooden sluice boxes, and concentrating tables had not been brought to light.

In those days the tailings of a stamp mill were exposed to the weather for a number of years and then worked over, and the second working always yielded more than the first, as the combined gold was freed by the air.

In this camp the stamp mill is still at work, aided generally by the bumping table and occasionally a vanner. Much smelting ore is mined and hauled to the railroad. At this time the question of custom mills is being talked of, while Boulder has awakened to the fact that a tramway might be constructed to all the mining camps in the county, and with reduction works built much business might be done. Capital is being solicited for this purpose, and Ward is endeavoring to get together sufficient to erect two reduction works, so that 1895 promises to be quite a lively year in this part of Colorado, and the production of gold much increased.

The establishment of a custom mill here that will save 90% of the values in mill ores means prosperity to the district, and when one has been started more will follow. The ore is in large quantities, but is not stamp mill ore, and does not yield under such treatment fair returns, except on the higher grades where a waste can be better afforded.

There is little lost time here during the year, and mining, wood-hauling and cutting, with milling, has continued all winter, and when mines and mills have the proper appliances this is a 12 months' camp.

There is little dead work required to reach values, and while these are not big, they have proven remunerative with our crude modes of treatment and will be better with improved methods. W. E. MEAD.

WARD, Colo., April 19th, 1895.

### The Decision of the English Court of Appeals in the Cyanide Case.

EDITOR ENGINEERING AND MINING JOURNAL:

Sir: At the present time, when the value of cyanide, as an agent of gold extracting, is daily becoming more fully recognized, and the advisability of its adoption at many mines in the United States is being seriously considered, the judgment concerning the validity of the MacArthur Forrest patent in foreign countries are of special interest; and your article, in your issue of April 20th, will doubtless attract much attention. Allow me, therefore, to point out one or two references to the judgment, lately delivered in the English Court of Appeals, which seem to me to materially alter the conclusions you have drawn. Before referring to this article, however, you may allow me to call attention to the report of the decision of the Supreme Court in Germany on the MacArthur Forrest patent in that country given in a recent issue of your journal. You state that the chief cause for the cancellation was "the publication of prior American patents covering the principal features of the above process." This is not correct. It is to be noted that the description of the process in

the patent, as allowed in Germany, was identical with that filed in England as the "provisional specification," and merely outlined the process in most general terms The principal cause of failure of the patent in Germany was given as the failure of the specification to fully describe the invention. This failure, on account of insufficiency of the specification, of the German patent can have no bearing whatever on the patents in other countries where the specifications are materially different and more complete.

As to the recent decision of the English Court of Appeals, the lengthy, elaborate and unanimous opinion of all the Judges accompanying its judgment shows most minute and careful consideration of every point of importance and bearing on the subject. A reference to the testimony given in the trial before Lord Justice Romer, will show that the case was most fully gone into, and many leading scientists exhaustively examined. The counsel on both sides showed remarkable ability in handling the case—and I do not think any charge of imperfectly presenting the case can stand against them. On the question of novelty, the Court found very decidedly in favor of both claims of the patent, as is shown by your first quotation, viz.: "prior to the plaintiffs' patent it was not known that cyanide of potassium would act as a solvent so as to extract gold from its ore."

Considering your criticism on the knowledge of the Court as to methods of gold extraction, I may suggest that your quotation is a description, by the Court, of the most complete method of treatment which was employed before the date of the plaintiff's patent, and evidence was given on the trial that even when these two processes had been employed on the ore, there was almost invariably still a certain amount of precious metal left in the tailings from the chlorination process, which residuum could not then be commercially obtained. This is merely a statement of one method of extracting gold—and that the most successful one—and the final judgment of the Court is, by no means, built on this as an argument. The Court considers the nature of the problem solved by the plaintiffs' patentees in the next paragraph to that from which your quotation is taken, saying, "It is well known that ore which contains gold also contains baser metals, such, for instance, as copper ores, lead and other metals, and the problem which had to be solved was how to extract gold out of the crushed ore, and get it into a state of solution without at the same time getting into that solution the other baser metals, or, in other words, how to extract gold from its ores and get it into a state of solution commercially free of the baser metals," and the Court continues: "That the plaintiffs solved this problem appears to us upon the undisputed facts of this case established." This quotation shows clearly that the judges considered the application of the process broadly, and not only to tailings from the chlorination process. As their reason for finding utility for the process the Court stated: "Professor Austen, of the mint, stated that in the year 1893 some 500,000 oz. of gold were produced by the cyanide process, and came to this country, . . . and this represents a very large sum in pounds sterling."

When you state that "the novelty of the invention . . . the judges considered sufficiently demonstrated by the fact that such distinguished professors as Dewar, Crookes and Sir Henry Roscoe testified that they did not know it," you do not accurately report the reasons the Court gave for their finding. The following quotations show this, viz.: The judges say: "If Simpson's patent of 1885 informed the chemical world that a small quantity of cyanide of potassium in solution would extract gold from its ore, it is strange that no witness (and we cannot find one) called by the defendants has pledged himself that before the plaintiff's discovery he knew that a very dilute solution containing a very small quantity of cyanide of potassium would do so. Upon this point . . . (Here the Court reviews the evidence of various witnesses on the point.) . . . and when we find such men as Professor Dewar, Professor Crookes and Sir Henry Roscoe stating that they did not know it, and couple this with the fact that it never had been used for commercial purposes for so doing, we cannot doubt that the fact was not known in the chemical world, and we come to the conclusion that there was novelty in the plaintiffs' discovery." . . . The finding of the Court in favor of novelty for the process was therefore based not only on the argument that certain men, however learned, "did not know it," but they took this into consideration with the much more significant fact that absolutely nobody had been produced who did know the facts the patentees had discovered.

Your last quotation contains the argument on which the court founded its opinion that a broad claim for the use of cyanide in any form would not stand, since, in the opinion of the Court, such an application of cyanide would possess no utility, as shown by their remark in this connection, viz., "it brings into solution the baser metals conjointly with the gold, and no beneficial result is obtained." Later the Court finds that the wording of the first claim in the English patent is such as to include cyanide solutions of all strengths, and the judgment concludes as follows: "If the first claim had been disclaimed, or omitted, we should not have been faced with the difficulty we are, but as it is in the specification we are unable to read it as the plaintiffs desire to do; and for this reason, and for this alone, we must with reluctance give judgment for the defendants and dismiss this appeal with costs."

From the foregoing it will be seen that the appeal failed solely because of the language and wording of the first claim. As you have pointed out such a claim occurs in the American patent, and the English second claim, which is similar to the American claim, was fully upheld by the Court. The decision of the Court shows, throughout, most careful and convincing reasoning on every point on which they have found for the plaintiffs. The case was most carefully prepared, fully presented and ably argued on both sides, and both plaintiffs and defendants sought out and employed the best evidence and testimony available. As to the result of another hearing in another country it is impossible to predict; but, in the face of the facts proven up to date it is impossible to speak of what is termed the "selective action" of dilute solutions, as a "pure myth," and it must be remembered that the English court, the only one before which the matter has been fully discussed, found such selective action satisfactorily and fully proven.

In apology for the length of my letter I must point out that this decision of the English Court of Appeals is one of great interest to all American mining men in so far as it bears on the MacArthur-Forrest American cyanide patents and a correct and full reading of it may prove of material value to many of them.

J. NOEL SPARKS.

NEW YORK, April 23rd, 1895.

## TREATMENT OF ORES IN THE COONEY MINING DISTRICT NEW MEXICO

Written for the Engineering and Mining Journal by Carl Andersen.

Following the description which I have given of the ore veins in this region,* the following notes on the mills and treatment of ores are of interest:

Mills have been erected on the Confidence, 20 stamps; Last Chance, 20 stamps; Maud S., 15 stamps; Little Fanny, 15 stamps, and Deep Down, 25 tons capacity. In all of the mills pan amalgamation is used. The ore, after being sorted, 3 tons into 2 tons, has averaged about from $6 to $8 in gold, and from $10 to $12 in silver. The extraction made varies from 65% to 75% of assay value, 70% being about the average. Exceptionally good results were obtained on surface ore from the Link mine of the Maud S. group, on which 80% was saved, due partly to the weathering of the minerals and partly to its greater value in gold. The ores are pulverized to 40 mesh. No grinding is done in the pans. From 1·5 to 3 lbs. copper sulphate and from 10 to 30 lbs. salt are used per ton of ore. The best results have been obtained by treating the pan until steam commenced to escape. The loss of mercury is about ¾ lbs. per ton, when the charge is carefully settled. The loss of mercury is sometimes greatly increased by bunches of ore-carrying oxide of manganese, which causes the mercury to "flour." As a remedy for this the addition of ferrous sulphate in the pan has been advised, perhaps with the idea of forming sulphate of manganese, which is soluble in water, and as such would not affect the mercury.

An average extraction of 70% can hardly be said to be very satisfactory, and many remedies have been proposed, among which a finer crushing, say to 60 mesh, seemed most reasonable. To ascertain if finer crushing would materially help the extraction, I made a number of mesh determinations and subsequent assaying of the headings and tailings from one of the mills, which at that time was making a run on $25 to $30 ore. As the battery samples assayed almost the same for the different meshes, it was found that while the extraction of the silver increases with the fineness of the pulp, the extraction of gold decreases, with exception of between 40 and 50 mesh, but even if by pulverizing to 50 mesh the extraction of gold and silver would reach the extreme made on pulp between 50 and 60 mesh, it would only mean a saving of 23 c. in gold and ½ oz. in silver, altogether a saving of 43c. per ton, which would hardly compensate the decreased capacity of the mill. Besides, the greater amount of slimes, of which a part is lost, and on the rest of which only a small percentage is saved, would decrease this saving. Consequently I believe that finer pulverizing would not increase the per cent. saved, rather the contrary. But if instead of, as now is done, when the slimes are mixed with the coarser pulp, the coarser pulp and the slimes were treated separately, as good an extraction would be made on the coarser pulp and a better, I believe, could be effectuated on the slimes, especially by using a thicker charge in the pans treating the slimes. This would not affect the capacity of the mill, and I believe less mercury would be lost in settling the charge. Great loss has often been caused by millmen not understanding the reaction of the chemicals they use on the ore treated. One instance which took place in one of the mills here is noteworthy. As well known, cyanide of potassium is used to clean the mercury, as it "cuts" the grease; and it occurred to the millman that if he put some cyanide of potassium in the pan it would keep the mercury clean during the amalgamation. He tried the experiment and found to his great satisfaction that the tailings assayed less, so he concluded he was making a better extraction. He kept on increasing the amount of cyanide of potash until he was using 5 lbs. per charge of 1·5 tons and thought he was making an excellent extraction. The decreased amount and value of bullion he did not try to explain. Although the cyanide of potassium is rapidly dissociated by steam, it is evident that a great per cent. of the fine gold went into solution before all the cyanogen had escaped. I found when treating the Deep Down ore by the cyanide process, that a cyanide solution would extract about 50% of the gold in one hour.

Entirely different I found it to be with the Queen ores. Very little ore from the Queen lode has ever been milled, but whenever it was, only 50% was saved by pan-amalgamation. The mineral in these ores is so extremely fine as in many cases only to give the quartz a dark color. This close association of the mineral and the quartz would at once point to the necessity of a fine pulverizing. The Last Chance ore, which is almost identical in character with the Queen ore, was treated by the Boss process, and although the mill was excellently managed the extraction by pulverizing to 40 mesh, was only between 50 and 60%. The reason I found to be as stated above:

| | Gold. | Silver. |
|---|---|---|
| Tailings coarser than 100 mesh assayed..... | $2.50 | 4·38 oz. |
| " between 100-120 " " ..... | 1.87 | 3·48 " |
| " finer than 120 " " ..... | 1.25 | 2·84 " |

This shows a greatly increased extraction with the fineness of the pulp, but as a very fine pulverizing on a rather low grade proposition as the Queen would be impractical, the question is how shall this ore body be treated? Some kind of leaching process would then naturally recommend itself, as a perfect separation of gangue and mineral would not be a necessity, the vein matter being a hard quartz with nothing to impede the leaching. Laboratory experiments, of which I conducted a hundred on ores from different parts of the Queen, gave an extraction with cyanide at 30 mesh of 90% of the gold and 80% of the silver, the loss of cyanide of potassium by using ½% of lime was only 1 lb. per ton.

No milling was ever done on the ores from the mines of the third system, but I believe a good saving would be made by plate amalgamation and subsequent concentration of the tailings. The same applies to the ores from the fourth system of mines.

The cost of mining and sorting on the mines on the contact is between $4 and $5 per ton. Cost of milling: Pay roll, $2,50; wood, 90c., and chemicals, 90c.; total, $4.30 per ton. To this must be added for the Little Fanny and Confidence mine $1 per ton for hauling of ore from mine to mill. An exception to this is the Last Chance, of which 10,000 tons were milled, averaging $10.26 per ton, the cost of mining being $1 per ton.

As already mentioned, the greatest drawback to this camp is the great distance to the railroad. The greatest recommendation is that, although principally a silver camp, the mills have been working steadily during this depression of silver.

* Engineering and Mining Journal, April 13th, 1895, page 313.

## ESTIMATION OF TELLURIUM IN COPPER BULLION.

By Cabell Whitehead.

Dissolve from 25 to 50 grams of the bullion in nitric acid 32° B. and boil off the excess of acid. Add to this solution an amount of a ferric nitrate solution equivalent to 250 mgms. of metallic iron. Precipitate, while hot, with an excess of ammonia; filter, and wash with dilute ammonia until the copper salts are entirely removed, re-dissolving and re-precipitating if necessary. The residue on the filter contains the tellurium and selenium present in the bullion as ferric tellurites and selenites. This is dissolved in the hydrochloric acid, and excess of tartaric acid added, the solution made alkaline with potassium hydroxide, and hydrogen sulphide passed through it, when the tellurium and selenium pass into solution as soluble sulphides. Filter; decompose the alkaline sulphides in the filtrate with dilute hydrochloric acid; allow the liquid to stand in a warm place until the hydrogen sulphide has been removed. Filter again; dissolve the tellurium and selenium sulphides in aqua regia; evaporate the solution to dryness, take up with hydrochloric acid and precipitate the tellurium and selenium from the solution by passing sulphur dioxide through to saturation. Cover the beaker and allow the solution to stand for 12 hours in a warm place, when the precipitate, which consists of tellurium and selenium, is filtered on a tar filter, dried at 100°, and weighed together.

The selenium is separated from the tellurium by boiling the precipitate in concentrated potassium cyanide solution, filtering, and adding hydrochloric acid, when the selenium comes down as a brick-red precipitate, which is weighed as before, after drying at 100°.

The tellurium is determined by difference or the small amount dissolved by the cyanide solution may be precipitated after removal of selenium, by saturating with sulphur dioxide, collecting the precipitate with the original residue, and weighing after drying at 100°.

## DIRECT TREATMENT OF ORES BY THE CYANIDE PROCESS.

Hitherto the use of the cyanide process in South Africa has been confined to the treatment of tailings from the mills, but a beginning has been made in the treatment of ore direct from the crusher. The London "Statist" of recent date says: "The company making this important new departure is the George & May. This company's property extends for 2½ miles along the outcrop of the main reef series, and, as the oxidized zone extends in depth for several hundred feet, it has enormous quantity of oxidized ore, since it owns such a large number of outcrop claims, and the main reef being wide and payable. In February Mr. Freeman, the manager, introduced the new method of treating this oxidized ore without putting it through the mill at all. The ore is broken in Gates crushers, and the lumps are sent direct to the cyanide vats. The oxidized ore being porous, that is, as far as the cement or banket containing the gold is concerned, permits the cyanide solution to permeate the matrix more freely than when crushed fine in the mill. About 85 % of the gold is recovered in this way. In February 900 tons were treated at the George & May, resulting in the recovery of 7 dwt. per ton at a cost of about 2½ dwt. per ton. This experiment has proved so satisfactory that 4,000 tons were to be treated in March, and vats are to be erected capable of treating 16,000 tons monthly. It is estimated that there are close on 2,000,000 tons of oxidized ore on this property, and that the whole, including the rich south reef, of which there are 20,000 tons developed, will give an average yield of about 10 dwt. per ton, which will give 20s. per ton profit. This new process will be of immense benefit in treating oxidized ore, especially in those properties where the main reef is still untouched. It will permit low-grade free-milling ores, of which there are enormous quantities on the various series, such as the Kimberley, Bird and Black Reefs, to be profitably worked at a very low cost. This process, so far as this property is concerned, may now be considered to have passed into the practical stage."

## AURIFEROUS CONGLOMERATE IN CALIFORNIA.

Written for the Engineering and Mining Journal by Harold W. Fairbanks.

In the twelfth report of the California State Mining Bureau a description is given of an auriferous conglomerate in Siskiyou County, supposed to represent a Mesozoic river channel. I am familiar with a portion of the region described, and as the views in that article are in my judgment at complete variance with geological facts, and as they are apt to be misleading in regard to the economic value of the deposit, it has seemed to me worth while to give the other side of the question.

In the article referred to, Mr. Dunn traces a supposed river channel west of Shasta Valley, in Siskiyou County, and along the western side of the Sacramento Valley, in southwestern Shasta County. Basing estimates on points at which it has been worked, he gives an enormous value for the gold contained in the conglomerate, and compares it in manner of formation to the so-called "conglomerate reefs" in South Africa. According to the description, the conglomerate is everywhere associated with sandstone of Upper Cretaceous age. It is generally underneath the sandstone, and at its western termination against the auriferous rocks of the Klamath Mountain region.

Detailed geological work in this region has shown that the Klamath Mountains were elevated above the sea during the cretaceous, but toward the close of that period an arm of the sea extended up the Sacramento valley into Oregon, being deflected eastward in northern Shasta County by the McCloud Mountains. Near the shore line west of Shasta valley, Mr. Dunn says that the cretaceous sandstones are interbedded with conglomerates which are indistinguishable from those of the supposed river channel at the base of the sandstone. The Klamath Mountains to the west contain gold-bearing quartz veins, the debris from which washed down to the shore of the cretaceous ocean, and was mixed with the shore gravels, and more or less regularly disseminated through their basal portion. The following are some of Mr. Dunn's reasons for considering this conglomerate to be an ancient river channel:

"The Siskiyou County deposit of 'auriferous conglomerate' is the existing result of the action of the same forces in the early cretaceous, the deposit certainly being the gravel-filled channel of a Mesozoic river. This, although its position under the cretaceous (Chico) sandstone, adjacent to the shore line of the cretaceous sea quite naturally has suggested that it might be a sea-formed conglomerate and not accumulated river gravels in place." . . . "The rocks of the Metamorphic Series, on which the 'auriferous conglomerate' rests unconformably, form the northern portion of the main auriferous mineralized belt of Siskiyou County, and are markedly auriferous in the immediate locality of the conglomerate. . . . The rocks are not sufficiently auriferous for their direct erosion to account for the relatively much greater auriferous value of the conglomerate, nor can wave energy account for the concentration of the gold at the bottom on and near the bedrock." . . . "The conglomerate is composed of water worn rounded pebbles, cobbles and large boulders, derived from the metamorphic and crystalline rocks, quartz, granite-porphyry, limestone and diabase, the latter the immediately underlying rock." . . . "The geological phenomena that associate this California 'auriferous conglomerate' with the so-called 'Reef' (conglomerate) deposits of the Witwatersrand, Transvaal, in South Africa, are particularly connected with the overlying cretaceous strata, and not with the conglomerate itself. These strata consist of sandstones mainly, but stratified conformably in their mass are shales (locally termed 'mud slates') and seams of conglomerate similar in composition and appearance to the main underlying bed." . . . "The Chico beds, sandstones and shales, which overlie the 'auriferous conglomerate' in Siskiyou County, extend far southward into Shasta County, Cal., and far northward into Oregon. Four miles southwest of Redding, in Shasta County, the Chico sandstone is found resting unconformably on the metamorphic pre-cretaceous rocks precisely as it does in northern Siskiyou County." . . . "The gravel is smooth and stream-washed, but contains marine shells too much broken to be identified." "On a smaller scale the deposit is a copy of the Siskiyou deposit. It probably belonged to the tributary system of the larger channel."

In the first place Mr. Dunn admits the resemblance of the gravels to beach deposits and their intimate union with sandstone. The fact of the metamorphic series being auriferous in the vicinity of the conglomerate does not make it necessary to resort to the theory of the transportation of the gold any great distance by stream action. Although the veins may not be large, yet long continued erosion could easily have given opportunity for the collection of the gold. Instead of 20 miles the old conglomerates have an extent of nearly 200 miles in California. Wave action, taken in connection with an advancing shore line caused by the sinking of the land, would perfectly explain the occurrence of the gold on the bedrock, for at each successive point as the shore line advanced the gold would be collected on the bottom and finally deeply buried by the subsequently deposited conglomerates and sandstones. What evidence there is in support of the view that the gravels of the supposed river were partly modified by wave action Mr. Dunn does not state; neither does he explain why it is that at all points throughout its extent the conglomerate exactly coincides with the shore line of the cretaceous sea. It is inconceivable that in all the disturbances which have affected this region that a river bed should be found corresponding perfectly to this recognized seashore. Streaks and beds of sandstone alternating with the conglomerates are the strongest proofs of their being a portion of the cretaceous beds. That diabase pebbles are found directly over a bedrock of the same material is also a strong proof that no river action was concerned in their deposition. As to the comparison of this conglomerate to those of the Witwatersrand in South Africa, I cannot see any relation between the two. Although the African deposits are spoken of as conglomerates, the gold is undoubtedly mostly or wholly due to secondary mineralizing action. Near the close of his article Mr. Dunn describes a conglomerate underlying the Chico sandstone in southwestern Shasta County which he considers due to the action of a tributary stream. In this connection he makes an interesting statement to the effect that in the conglomerate there occur fragments of marine shells. I would be very much interested to see it explained how sea shells were deposited in a "river channel." In Shasta, as in Siskiyou County, this supposed river channel exactly coincides with the shore line of the cretaceous sea. After a careful perusal of the whole article, it is evident that Mr. Dunn has let a theory run away with the actual facts presented.

In an earlier report of the State Mining Bureau another writer has described a supposed river channel in Shasta County, which he traced across the summit of the Coast Ranges toward the Pacific Ocean. This, as in the other case, geological work has shown to be simply a beach conglomerate. Almost the whole region embraced within the area of the Klamath Mountains is more or less auriferous and has undergone enormous erosion since the period of mineralization. That there is anything peculiar about the conglomerates, or that the fact of their being rich in gold has any such bearing as that described by Mr. Dunn, I believe there is no evidence to support.

The gold bluffs on the coast of Northern California were referred to in the article quoted as an ancient river channel undergoing modification in a manner similar to that supposed to have affected the conglomerates in Shasta Valley. I do not know that there is any evidence that the gold bluffs are unmodified river gravels. These auriferous ocean sands, as well as those at many other points on the coast of California, have been modified time and again during Tertiary and Quaternary times, and although their ultimate concentration may be due to river action this long continued subjection to the action of waves and tides has caused them to lose all the characteristics of river deposits, and in many cases no such relation can be shown to exist.

The value of the Siskiyou conglomerate, as figured out by Mr. Dunn, requires more exploitation and confirmation. It is manifestly impossible to reach any correct estimate now, for the gold is probably very unevenly distributed. On those portions of the old beach nearest rich veins or the mouths of mountain streams, the gold must be more abundant, while it is probable that much of the old beach extending to the eastward under the lavas and exposed in the canon of Pitt River is almost if not quite barren.

In the "American Journal of Science." for October, 1894, there is an article by Mr. W. Lingren, on "An Auriferous Conglomerate of Jurassic Age in the Sierra Nevadas." This is found exposed chiefly between the North and Middle forks of the American river. The gold is supposed to have been collected from disintegrated quartz veins existing prior to the

formation of the conglomerate on the shores of the Jurassic sea. From the descriptions given it seems that it has been frequently mistaken by the miners for an auriferous river channel, and shafts have been sunk in it at several places. The statement is made that by means of crushing and panning very carefully carried out, the gravel from many places was found to contain a small amount of gold. The remarkable fact, however, and one which seems inexplicable on the theory of the collection of the gold on the ancient beach, is the presence of iron pyrites and the absence of black sand, conditions which would be expected, judging from all experience, to be indicative of secondary mineralizing action. There is additional evidence in support of this view, in the fact that this whole region has been more or less mineralized since the formation of the conglomerate. Basing my criticism on the descriptions given, I cannot see how the existence of pre-Jurassic auriferous veins is proved. If this is the strongest evidence which has been found, the proposition cannot be considerated demonstrated.

## ABSTRACTS OF OFFICIAL REPORTS.

### Rio Tinto Company, Limited, Spain.

The report of this company covers the year ending December 31st, 1894. The balance sheet at the close of the year shows that the assets of the company were as follow: Mines, railroad and buildings, £5,492,058; extension and development works, £250,700; ore and copper on hand and under treatment, £852.439; supplies in Spain and elsewhere, £281,382; works and offices in England, Holland and Germany, £45,677; cash £182,733; total assets £7.104 989. The liabilities at the same date were as follows: Stock, 325,000 shares, £3,250,000; bonded debt, £3,437,060; accounts and balance payable, £252,842; revenue account, balance, £165,087; total liabilities, £7,104 989. The capital liabilities show the usual reduction in the amount of bonds effected by the sinking fund. The total amount of bonds drawn for payment during the year and charged to revenue account was £97,300; of this sum £53,194, has been applied to writing down the value of the manganese in stock, which is now being realized, and £17,443 to the adjustment of the value of pig iron used in the cementation tanks which had previously been over-estimated; this leaves a balance of £26,663. In order to bring the sterling value of sundry accounts into harmony with present rates of exchange between Great Britain and Spain, the directors have decided to reduce the amount of certain accounts in the balance sheet such as for example plant, machinery, stock and development. For this purpose it is found that after making provision for exchange in the accounts of the year the sum of £49,260 was required. The balance of £26,663 was supplied to this and the remainder, £22,597, was charged to general depreciation account. The redemption of these bonds from the sinking fund left £3,437,060 outstanding out of the original issue of £4,300,000. Of these bonds £1,862.340 are of the first series of 1880, £1,001,200 of the series of 1884, and £573,520 of the series of 1892.

The revenue account for the year is condensed as follows: Profit on sale of produce in 1894, £459,406; rents, fees, etc., £11,145; adjustment of exchange account £86,547; making a total of £557,098. Against this there are to be charged interest on bonds £174,766; taxes, interest and general charges £102,186; plant and outlay written off £23,-933; bonds redeemed £97,300; making a total of £3987.85 and leaving a balance of profit for the year of £158,913. To this is to be added the balance carried over from the previous year, which was £71,174, making a total of £230,087. From this amount a dividend of 4s. per share paid in November 1894 absorbed £65,000 and the directors recommend the payment of another dividend of 4s. per share amounting to £65,000 and the carrying of £75,000 to the reserve fund, making in all £205,000 and leaving a balance of £25,087 to be carried forward to the accounts of 1895. The dividends amounted to 4% on the stock.

Underground mining operations in the North Lode have been suspended, as the ore can be more economically taken from the open cast. Great progress has been made in developing this portion of the company's property. The quantity of overburden removed during the year was 600,073 cu. m., and the outlay on the work was charged to revenue. It is estimated that a similar quantity will be removed this year, a large proportion of the total output of ore being obtained from this source. The overburden account now stands at £95,371. The extension and development account has been reduced from £182,341 to £155,328, and for its further liquidation the account is credited with a regular charge on every ton of mineral raised.

The quantity of pyrites extracted for the year was, for shipment, 498,540 tons; for local treatment, 888,555 tons, making a total of 1,387,095 tons of an average copper content of 3·027%. The deliveries of pyrites to consumers in England, Germany, etc., reached 485,441 tons.

The copper produced in 1894 by treatment at the mines was 20,606 tons; and the copper in pyrites shipped amounted to 12,083 tons; making a total of 32,689 tons.

The following quantities were brought to market: Refined copper, 20.425 tons; copper in pyrites, 10,636 tons; a total of 31,061 tons.

The following table shows the production of the mines for four years past:

| Pyrites extracted, tons. | 1891. | 1892. | 1893. | 1894. |
|---|---|---|---|---|
| For shipment | 461,027 | 406,912 | 477,656 | 498,540 |
| For local treatment | 972,060 | 995,151 | 854,346 | 888,555 |
| Total | 1,436.087 | 1,402,663 | 1,332,002 | 1,287,095 |
| Average copper contents | 2·649% | 2 819% | 2·996% | 3·027% |
| Pyrites consumed, tons | 432.532 | 435,758 | 469.339 | 485.441 |
| Average copper contents | 2·651% | 2 569% | 2·659% | 2·594% |
| | 1·309% | 1·465% | 1·541% | 0·988% |
| Copper produced at mines, tons | 21,227 | 20,017 | 20,887 | 20,606 |

The whole of the stocks of copper at the company's works at Cwm Avon and Grange, consisting of refined copper, copper in process, precipitate, and matte (in all, 5,652 tons), are carried over at cost price. The reserve heaps are now estimated to contain 105,803 tons of fine copper, which stand in the company's books at £5 0s. 6d. per ton.

The directors report says: "An exceedingly heavy rainfall during the past winter insured an ample supply of water, a very important feature in the production of copper by lixiviation; no less than 23 in. of rain has fallen since the commencement of the current year, and the reservoirs are filled to their utmost capacity, storing about 3,750,000 tons of water. Arrangements are in progress for raising the demand at one of the reservoirs, considerably increasing the storing capacity.

"The railroad and shipping pier are in good order, and all repairs have been charged to revenue. It is now proposed to open the railroad to public traffic as well as for the use of the company, and it is expected that a considerable amount of profit can be derived from this source without interfering with the company's business."

## METHOD OF DETERMINING CHROMIUM IN CHROME ORE.*

By Edmund Clark.

Professor Storer and others have suggested the use of nitric acid and potassium chlorate as agents for the oxidation of chromic compounds to chromic acid. Using this suggestion as a basis for the determination of chromium in chrome iron ore, I have experimented with a method which has proved both practicable and accurate.

For complete analysis a half gramme sample of the finely ground ore is weighed into a platinum crucible with a capacity of not less than 50 cc. The ore is covered with 25 grams of potassium bisulphate and fusion is commenced over a Bunsen burner with very low flame which is protected from air currents by a sheet-iron chimney. At first, the flame should be so low as to fuse the bisulphate very slowly. After the mass is in a liquid condition, and there is no longer any danger of loss from spattering, the crucible is grasped with a pair of crucible tongs and the contents are run up around the sides, in order to seize hold of any particles of ore which may have become stranded there. At this stage of the process, the flame may be increased a little so as to cause a tolerable redness of the bottom of the crucible.

At intervals of 10 minutes the crucible must be manipulated by the operator, as before described. Forty minutes will suffice for complete decomposition of the ore. Pour the contents into a perfect clean and dry 4 to 5 in. platinum evaporating dish, making as thin a layer of the mass as possible. Place the crucible and cover in a 12-oz. beaker and reserve for the solution.

Cool the contents of the dish quickly. Cover with a suitable watch-glass to prevent loss of particles by the sudden contraction of the cooling mass. When cool, rinse off the watch-glass and add 35 cc. of hydrochloric acid (1·20 sp. gr.) and 25 cc. of water.

Boil quietly, keeping the watch-glass on until the solution is complete, usually requiring about 15 minutes. Transfer the solution to the beaker containing the crucible and warm on the steam bath until the crucible and cover can be washed free from the bisulphate fusion. The solution now occupies about 100 cc.

Let contents practically settle, then decant the clear supernatant fluid into another 12-oz. beaker and add 15 cc. more of hydrochloric acid to the residue. Heat on the steam-bath until nothing but silica remains undissolved. Unite solutions and filter, reserving the filtrate and igniting the filter. Weigh as silica.

The filtrate, which should be easily contained in a 12-oz. beaker, is now rendered slightly alkaline with ammonia. The dirty, reddish green precipitate consists of the hydroxides of chromium, aluminum and iron. These are warmed on the steam-bath until the smell of ammonia is faintly perceptible. Filter without washing and dissolve the collected hydroxides into the original beaker with dilute hydrochloric acid. Reprecipitate with ammonia and collect on the same filter as before, washing carefully with hot water, combine the two filtrates, and in the united solution determine lime and magnesia.

Transfer the filter containing the precipitated hydroxides to a 4½-in. porcelain evaporating dish and cover with a 5-in. watch-glass. Add 50 cc. of nitric acid (1·42 sp. gr.) and heat gently. From time to time carefully add potassium chlorate with a small glass of porcelain spatula.

The gradual oxidation may be noticed by the changing of the dirty green color of the emulsion to a clear orange-red solution. The organic matter of the filter-paper has been completely oxidized along with the chromic hydroxide. The complete oxidation is easily detected, but a small excess of potassium chlorate is added to insure it. The chromium now exists as chromic acid.

Transfer the solution to a 12-oz. beaker, making up to about 150 cc. with water, and precipitate the iron and alumina with ammonia. Filter into a 16-oz. beaker without washing. Dissolve the precipitate on the filter with warm dilute nitric acid and wash thoroughly, allowing the solution to run into the beaker in which the precipitation was made. Reprecipitate with ammonia and throw the precipitate on the same filter, allowing the filtrate to be caught in the same beaker as was the first filtrate. Separate and determine the iron and alumina by any good method.

The ammoniacal filtrate contains the chromium as ammonium chromate. Acidify with hydrochloric acid and add a sufficient quantity of strong sulphurous acid water to completely reduce the chromium. The clear bright green color imparted to the solution is an indication of the complete reduction.

The excess of sulphurous acid must be driven off and then the solution is rendered just alkaline with ammonia, with a final addition of three or four drops in excess. Stir well with a glass rod and heat over a lamp until the smell of ammonia is only faintly perceptible. Filter and allow it to drain without washing out the beaker or washing the precipitate. Then wash it carefully back into the beaker, add more warm water and stir to insure complete solution of all alkaline salts. Throw the precipitate back upon the same filter and wash thoroughly. Drain, dry and ignite in a platinum crucible and weigh as chromium sesquioxide.

Another method of determining the chromium in the yellow solution of ammonium chromate, and one which many chemists may consider the more expedient, is as follows:

Moderately acidify the ammonium chromate solution with acetic acid and warm. Add an excess of a clear solution of plumbic acetate and allow the precipitate of plumbic chromate to settle in a warm place for several hours; then collect on a weighted filter (previously dried at 100° C.) and wash with cold water.

Dry and weigh. The increase of weight is the weight of the plumbic chromate, from which the percentage of chromic oxide may be calculated.

*The Journal of the American Chemical Society.

## THE SILVER MINES OF THUNDER BAY.*

By Peter McKellar.

A few years ago the silver mines of Thunder Bay were in active operation and much mining development was in progress—now all are closed down. The depression in the value of silver, the advent of the new mining law and about the same time a number of the prominent mines had penetrated down into the silicious or poor bearing stratum of the Animikie rocks—these causes combined, resulted in the complete closing down of all the mines.

It was known to geologists and mining men for many years, that the veins were richer in silver within the argillaceous stratum than within the underlying silicious stratum; but few of the mining men had much knowledge of the thickness of either, and were often disappointed in their mining operations on this account. As this characteristic is becoming better understood, many of the misdirected efforts of the past may in future be avoided. At Thunder Bay the Animikie group of rocks covers an area of more than a thousand square miles. It consists principally of slaty beds, argillaceous and silicious, lying nearly horizontally upon the denuded upturned edges of the highly inclined Archean strata, which in this locality undoubtedly are largely Huronion schists. The thickness of the Animikie formation along the run of the western belt of silver mines, or from Silver Harbor to Gun Flint Lake, 80 to 90 miles, will probably average 600 to 1,000 ft.; but out toward the coast line it will be much thicker. The silicious or lower stratum, the lower silicious division of Mr. Ingall, is at the base of the Animikie rocks and is about 400 ft. thick at the Duncan mine, and nearly 700 at the Beaver mine. It is not likely to exceed the latter thickness much anywhere along the northern silver belt. The carbonaceous clay slaty stratum that overlies the silicious stratum, shows a thickness of about 300 ft.; but along the northern silver belt, it has been partly or wholly removed by erosion and denudation in places; and in others it is covered with a bed or sheet of trap which, again to the southward, is overlaid with slaty beds higher in the formation. In the mines along this belt, all the rich deposits of silver were found in the veins within this argillaceous stratum; which in the southward direction dips under higher beds of the formation. It remains to be proven whether or not the argillaceous beds of the higher horizons have the same favorable influence on the deposition of the silver within them as the lower stratum has. From the past showing it would appear not, as in the great central belt, some ten miles or more in width, which lies immediately to the southward of the northern silver belt, no rich silver lodes have yet been found like the mines on the western silver belt. This apparent barrenness of the central belt may be accounted for, 1st. That the lower argillaceous stratum is the real silver bearing stratum of the formation, in which case the veins here would have to be mined down through the overlying beds to reach the silver bearing stratum. 2d. The western silver belt seems to lie along a line of weakness, where there are many fissure veins, while along the central belt the veins are comparatively few and may not penetrate down to the metalliferous reservoir to which I will refer further on. I consider the search for the causes that produced these silver bearing veins a matter of much importance, that is, to try and find out if the silver in the veins is due to lateral segregration, or if it ascended in the fissures from a deep source, to be deposited subject to the laws of attraction or to the influences of the adjacent rocks. If the infilling is by lateral segregation, it seems to me clear, that in the Animikie group the veins need only be worked down to the lower silicious division, for the underlying Archean strata are exposed in extensive areas, here and there, throughout the Algoma district. They show to be auriferous in many places; yet, they do not show to be argentiferous in this respect anywhere, I believe, excepting in the vicinity of the great Lake Superior trough, as at the Gopher and Star mines; Whitefish River, north of Whitefish Lake; the 3 A. mine north of Silver Harbor, Thunder Bay; Syrette location east of Nipigon Bay; the locations at the mouth of the Steel River; and the Little Pic silver mines, west of the Little Pic River. These are all in the Archean strata and carry silver ore similar to that of the Animikie veins, and in the case of the 3 A. and Gopher mines, rich ores. If the infilling is from below, we may look for these veins to prove valuable for mining to great depths, as the 3 A mine, and Gopher, etc., prove that some of the Archean strata at least, have the influence to cause the precipitation of silver in fissures within them, when present in solution, as well as the argillaceous slates of the Animikie have. The greater showing of silver in the Animikie veins than in the Archean, may be on account of the Animikie area occupying the more favorable position in relation to the metalliferous reservoir below.

There is no doubt, the Thunder Bay silver veins are true fissures, as shown by the faulting of the walls. The Silver Mountain vein shows a fault of 60 to 70 ft.; the Beaver vein, 15 ft.; the Rabbit Mountain much greater; the Duncan Mine vein 120 ft., etc.; so that the fissures must penetrate to a great depth. It seems certain that the copper and silver of the native copper mines of Lake Superior, were ejected from great depths with the fluid rocks of the Keweenawan group, and also that the fissures of the silver veins here, resulted from the subsidence in cooling of these great eruptions, and subsequent to the flow of the fluid rocks. The previous fissures formed were filled with fluid rock and show now as trap dykes in great numbers, especially along and near the coast. It is highly probable that those fissures cut down to the great reservoir from which the eruptive rocks of the Keweenawan were ejected, heated vapors, steam and aqueous solutions would ascend in the fissures, and carry metals and minerals along; and continue the ascension and precipitation of the solution subject to the influences of the adjacent rocks until the fissures were filled as we find them. In the event of the argillaceous beds having a greater influence in depositing the silver than the interstratified silicious beds that the Animikie have, the veins within the former should show richer in silver than within the latter, as we find them. So also with the underlying Archean strata it is quite probable that the veins will be rich in silver within some of them and poor within others in a similar way.

The middle of the Lake Superior trough, the portion opposite Thunder Bay, appears to have been the most metalliferous part of the great reservoir, for all the great copper mines are here on the one side and the silver mines on the other. Although the rock formations continue westward for 200 miles or more, the rich mines do not show excepting around the middle portion of the trough.

There are two series of fissure veins here; those of the one the most numerous vein nearly east and west, about parallel with the great trough; those of the other cross and are prominently developed along the outer coast line, and rarely penetrate far inland. The position of the latter series near the middle of the trough might be expected to prove richer than the other series of veins. The Silver Islet vein is one of them, and is certainly the richest one known thus far.

If it can be proven satisfactorily that these veins carry the silver in the underlying Archean strata this locality is likely to prove a valuable deep mining district. I consider it quite probable that it will do so, in view of the natural conditions that bear on the matter, some of which I have in this paper endeavored to show.

*Abstract of an article read before the Ontario Mining Institute.

FRANZ POSEPNY.

## FRANZ POSEPNY.

The unexpected tidings of the death, on March 27th, of Bergrath Prof. Franz Posepny, of Vienna, will cause sincere regret to many more than his personal friends in this country (though these were not few). His elaborate and brilliant treatise on the "Genesis of Ore Deposits," contributed to the Chicago meeting, in 1893, of the Institute of Mining Engineers, and the extended discussion to which it has given rise, have made his name and work familiar to American mining engineers who had not previously realized his eminence as an investigator and authority, and who will now mourn his loss from a field which he had made peculiarly his own. He was 59 years old when he died, and doubtless would have added much additional valuable material to science if he had been spared for further activity. In a biographical sketch, to be published hereafter in the Transactions of the Institute, I shall attempt to outline Prof. Posepny's scientific labors, and to estimate his position and influence. I will therefore content myself here with saying that the results of his work were epitomized by himself, in a masterly fashion not to be equaled by any commentator, in the treatise above mentioned, which embodies in final form the substance of the lectures delivered by him during the ten years in which he was, at the Mining Academy of Przibram, the Professor of the Science of Mineral Deposits—a department created expressly for him.

I am glad that the "Journal" is able to present to its readers an excellent likeness of Prof. Posepny, engraved from a photograph which he sent me last year, and which shows him in his splendid prime, before the prolonged and painful illness to which he finally succumbed. To those who met him during his visit to the United States in 1876, this picture will vividly recall his genial, vigorous and magnetic personality. To me it will always be the memorial of a valued colleague and dear friend.

R. W. RAYMOND.

German Fuel Exports and Imports.—Exports of mineral fuel from Germany for the two months ending February 28th included 1,509,304 tons of coal, 2,947 tons of lignite or brown coal, 374,031 tons of coke, and 35,938 tons of briquettes. The imports for the same period were 454,609 tons of coal, 906,203 tons of lignite, 73,452 tons of coke, and 8,678 tons of briquettes. The imports all show a considerable increase, except those of coke, in which there was a slight decrease. The imports show a slight decrease in all the articles named.

## UTILIZING GASES FROM COKE OVENS.*

La Societe des Mines de Carmaux has a battery of 84 coke ovens, and has for some time past been considering the question of utilizing the waste gases. Two solutions were proposed. 1. A complete distillation of the gases permitting the recovery of the by-products in a marketable form. 2. The use of the heat of the gases to make steam by the employment of a special generator.

The first solution, that is, the complete distillation of the gases, requires the installation of an expensive plant with special apparatus. On the other hand, the simple utilization of the heat presented many advantages. The first cost of the plant was less, the rest of the apparatus—boilers of an ordinary form or multitubular—could be easily installed and their management would require no special technical knowledge. The proximity of the St. Barbe mine works and of the plant for the manufacture of briquettes, which together had 22 boilers in use, permitted the direct use of the gases without heavy loss by condensation in carrying the steam. Finally, the gases being taken only from the parts of the chimneys connected with the coke ovens and then passed into the open air, it was believed that the quality of the coke would not be changed, provided the draft of the boiler chimneys was properly regulated.

The second solution of the problem was thus adopted, and after careful comparative study it was decided to use Belleville multitubular boilers, which seem to have all the qualities required by the conditions presented.

At Carmaux there are 84 coke ovens of the Coppee system divided into 10 batteries, 8 of 8 ovens each and 2 of 10 each. Each oven takes a charge of 5 tons of coal to produce 4 tons of coke after 48 hours' treatment. The charging is done from above through 3 openings arranged in the length of each oven. Each line of charging holes is served by a track which runs from one end to the other of the line of ovens. The gases escape by openings placed in the upper part of the oven: pass through flues in the walls separating the ovens, and into the collector of the battery, from which they pass to the chimney. Each battery is separated from the next one by a wall of varying thickness; at each end also there is a wall of masonry.

The first, or experimental boiler, is placed a little in front of the ovens in such a way as not to interfere with the movements of the charging wagons and the tracks. A collector lined with refractory material is built in the wall to take the gases near the base of the battery chimney and carry them to the boiler. There the gases are forced through two openings upon the surface of the tubes of the boilers; after passing these tubes they escape into an iron chimney placed directly over the boiler. Two dampers or gates, one horizontal and the other vertical, permit the gases to be turned at will into the ordinary chimney battery of ovens and to the boiler. These dampers are placed at a certain distance from the direct current of the flame in such a way as to avoid the destructive action of the fire. The Belleville boiler used is provided with an automatic feed arrangement. It has five elements, giving with the steam-drum a heating surface of 82 square meters in all. Openings made in the lower part of the masonry surrounding the boiler permit the entrance of air to be regulated so as to give at all times a complete combustion of the gases.

Recently some trials were made extending over six consecutive periods of 24 hours each. The eight ovens were drawn, two at a time, in order that there might be as nearly even a quantity of gases delivered to the generator as possible during the period of 48 hours. The results obtained were as follows: Quantity of water vaporized per hour averaged 1,317 liters, the maximum quantity being 240 liters, and the minimum 890 liters. The average temperature of the ovens was 1,223° C. The pressure in the boiler varied from 9 to 15 kilos. The steam produced is used: 1. During the day at one of the engines driving the Briquette Works, at a constant pressure of 5 kilos. It has taken the place of two boilers heated by coal formerly used. 2. During the night it is used at the St. Barbe Works, where it is mixed with steam from the battery of ordinary boilers.

The coal coked gives about 25% of volatile matter. The average quantity of water vaporized per square meter of heating surface per hour is 14·6 kilos, but this figure has been increased to a maximum of 22·2 kilos. The results noted have given much satisfaction from the point of view of steam-making and the working of the boiler. Assurance has also been given that the coke is not altered in any way. The single boiler, as erected and tried, has proved so successful that the company proposes to put up additional boilers in order to use completely the heat of the gases from the 84 ovens, and work has already been begun on these new boilers. Moreover, the St. Barbe works do not use all the steam, and part of it will be taken for a central station requiring about 1,200 H. P. This station will enable the company to operate a number of machines in the mine and will also provide an economical light for the shafts and passages.

This interesting installation furnishes an excellent example of the results which can be obtained by utilizing the heat now generally lost in coke ovens.

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Spanish Exports and Imports.—For the two months ending February 28th, according to the Director-General of Customs, imports into Spain included 265,159 tons of coal, a decrease of 23,463 tons; 21,361 tons of coke, a decrease of 21,616 tons; 3,054 tons of cast iron, 1,457 tons of wrought iron, 2,834 tons of steel, and 580 tons of tin plates. Exports of metals for the same period were 451 tons of coal, 5,200 tons of coke and 20,499 tons lead. Exports of minerals for the two months included 689,022 tons of iron ore, a decrease of 110,258 tons; 57,346 tons of copper ore, a decrease of 6,108 tons; 1,970 tons of zinc ore, a decrease of 3,453 tons; 1,707 tons of lead ore, a decrease of 1,279 tons and 23,474 tons of salt, a decrease of 18,376 tons.

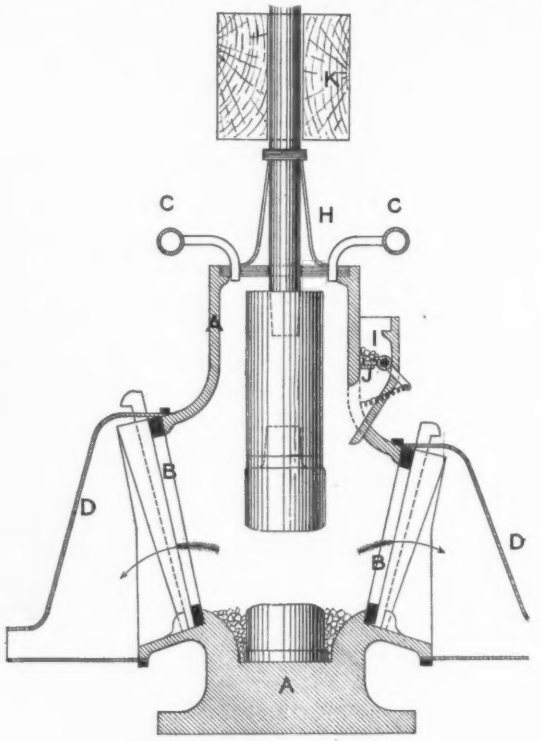
* Abstract of article by G. A. Renel in "Le Genie Civil."

## DRY CRUSHING.

A recent form of stamp for dry crushing, invented by F. A. Suckling, is referred to in the "South African Mining Journal," from which the accompanying illustration is taken.

Mr. Suckling says that when crushing wet, the crushed material has not as free a discharge through the screens as when crushing dry, for the following reasons, viz.: That the water, and the ore in suspension in it, are churned or violently agitated by the action of the stamps; and that from between, and at the back of the heads, cannot readily get to the screens, as the water is not propelled in any particular direction, and to a certain extent it also acts like a cushion against the sieving. Whereas, when dry crushing, the force of the air, in escaping through the screen, lifts and carries away the powder as fast as it is produced by the stamps, and thus prevents its accumulating inside the mortar; so that many believe that the crushing capacity of the stamps will be increased, and that a screen having 500 holes to the square inch will give excellent results. In experiments made by A. F. Crosse it is stated that when using such a screen the gold-bearing portions of the ore were more finely crushed, and that 35 per cent. of the crushed material passed through a sieve having 6,400 holes per square inch: that this portion contained 42·66 per cent. of the gold, and that in wet crushing a large percentage of this finely-divided gold is never caught.

In this dry process, any gold or other material that has not passed through the screens will be retained in the mortar until the usual time for cleaning up, when it is taken out for subsequent treatment. It is not necessary, however, to use a screen at all, for by adopting a vertical air




SUCKLING'S DRY-STAMP BATTERY.

column the required results can be obtained, and also, if needed, a classification of the particles of ore as well.

The following is a description of the accompanying illustration of a dry stamp with double discharge:

A. The mortar box. B. Screens. C. The inlets for the air. D. The hood for inclosing the screens. E. Pneumatic tube to cyanide vats, or other receptacle. F. Flexible length in pneumatic tube, to allow hood D to be easily removed for giving access to the screens, or to the inside of the mortar when required. G. Length made on the telescopic principle, for a similar purpose as the foregoing. H. Sleeve round stamp stems, made flexible to avoid friction, and also not to interfere with the working of the stamps. I. Pivoted shelf with lever and weight, or springs. J. Rubber, or other soft material, to insure a close joint, and thus prevent the escape of dust and air. K. Part of present battery framing.

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The Regulation of Coal Mines in South Wales.—The arbitrators nominated to revise the special rules for the South Wales collieries met at the Home Office, Whitehall, London, on April 2, and settled the terms of the award. The arbitrators (Sir William Thomas Lewis, for the colliery owners: Mr. John Batey, for the Home Office; and Judge David Lewis, umpire; Mr. Gascoyne Dalziel, Secretary, and Mr. Vazie Simons, solicitor) have been sitting and taking evidence for the last 18 months, and have revised 85 rules out of the 240. Their award applies to about 170 collieries. The rules discussed principally related to the timbering of the working places and roadways, as a comparatively large number of the deaths arise from the falls of the roof and sides, and the use of safety lamps and explosives. The Home Office claims that under the new rules a substantial improvement will be effected, especially in regard to timbering arrangements. The proposed alterations of the rules regarding shot-firing were withdrawn by the Home Office, pending legislation on the subject as the result of the inquiries of a Royal Commission which has recently reported. The new rules will come into force on July 1 next. It is intended to have further inquiries into other colliery districts.

## RECENT DECISIONS AFFECTING THE MINING INDUSTRY.

### Action Against Mine Owner for Death by Wrongful Act.

The Court of Appeals of Colorado recently decided the following points, in an action brought by a party for damages caused by the death of his son while working in a mine:

(1.) A parent may recover for the death of a child, although the latter never contributed to the parent's support.

(2.) In an action by a father to recover damages for the death of his son, evidence of an arrangement between the two, for a loan by the son to the father, is admissible on the question of damages.

(3.) A miner working in a shaft upon a high column of dirt, supported above the bottom of the shaft by a sufficient bulkhead, does not assume the risk of the additional danger caused by the removal of the bulkhead without his knowledge.

(4.) Where a miner worked in a shaft upon a high column of dirt, supported by a strong bulkhead, which was removed without his knowledge, he is not guilty of contributory negligence.

(5.) When the evidence as to the place where such party worked is sufficient to show whether it was safe, it is not error for the Court to charge the jury that the mine owner was bound to provide a reasonably safe place for him to work in, without defining what a "safe" place was.—Molly Gibson Consolidated Mining and Milling Company v. Sharp, 38 Pacific Reporter, 850.

SUPREME COURT, FIRST DEPARTMENT.

### Failure to Enjoin Blasting is not Contributory Negligence.

Where a contractor employed by a party to do blasting near another's house proceeded with the work in so careless a manner that such house was injured, the failure of the owner of the house to enjoin the continuance of the work was not contributory negligence.—Berg v. Parsons, 31 N. Y. S. Rep., 1,091.

SUPREME COURT, SOUTH CAROLINA.

### Rights of Lessee of Water Power.

The lessee of the right to use a certain amount of water power from a canal may erect on the banks of the canal, in addition to the water plant necessary to make use of the water, a steam plant essential to the use of the water plant, but no more than is necessary to supplement to such water power plant. Columbia W. P. Co. v. Columbia Elec. St. Ry. L. & P. Co., 20 S. E. Rep., 1002.

SUPREME COURT, RHODE ISLAND.

### Contributory Negligence of Employees.

Where, in an action by an employee for personal injuries, it appeared that he was aware of the danger in putting his hand into a picker while it was in motion, or having his hand caught by the feed-roll by reason of the defective condition of the machinery; that, notwithstanding his knowledge of the danger, he put his hand into the picker while it was in motion, instead of first stopping it, as he might have done, and his finger was caught and crushed, he was guilty of contributory negligence, and it was proper to direct a verdict for the employer. Gafney v. Inman Mfg. Co., 31 Atlantic Reporter, 6.

UNITED STATES CIRCUIT COURT OF APPEALS.

### Patents on Machinery.

Changes of form do not avoid infringement when the two devices do the same thing in substantially the same way, and accomplish the same result.

An inventor is entitled to all the legitimate results of the invention covered by his patent, including even those which were not foreseen by him.—Thomson Meter Co. v. National Meter Co., 65 Federal Reporter, 427.

SUPREME COURT OF MICHIGAN.

### Prescriptive Right to Flowage.

A person by maintaining for 15 years a milldam so as to flow the land of another, without complaint from the other, acquires a prescriptive right of flowage in the land.—Williams v. Barber 62 N. W. Rep., 155.

SUPREME COURT OF MONTANA.

### Placer Patent—Exclusion of Quartz Lode.

A lode or vein, to come within the Revised Statutes of the United States, Sec. 2,333, exempting it from the grant of a placer patent if its existence was known at the time of the application for such patent, must be of such extent as to render the land more valuable, and of such value as to justify exploitation and development.—Brownfield v. Bier, 39 Pac. Rep., 461.

SUPREME COURT, WISCONSIN.

### Deceit in the Sale of Mining Stock.

The measure of damages on a sale of mining stock, voidable on account of fraudulent representations, is the difference between the real value of the stock at the time of sale and what the value would have been had the representations been true.

In an action to recover damages under such circumstances, the market value of the stock at or about the time of the sale is evidence on the question of its real value.

Representations by a vendor of mining stock that the purchaser could not lose on the investment, and that the mines would pay dividends in the near future, being a mere expression of opinion, or a promise of a future condition of things, will not form a ground of recovery by the purchaser on the ground of false representations.—Warner v. Benjamin 62 N. W. Rep., 197.

UNITED STATES CIRCUIT COURT, DISTRICT OF MONTANA.

### Placer Mining Rights.

One having a placer mining right, which can only be acquired on public land, can maintain suit to quiet title, if at all, only as to his limited interest.—Carter v. Thompson, 65 Federal Reporter, 329.

Rapid Railway Construction.—London "Engineering" says in the course of Sunday a feat, which is believed to be unparalleled in the history of railway engineering, was accomplished at Dalmuir. The North British Railway line, which terminates at present at Clydebank, is being extended to join the main line at Dalmuir, so as to form a more direct and expeditious route from Glasgow to Helensburgh and Balloch. The extension passes under the main line a short distance to the east of Dalmuir Station, and within the short space of 20 hours the embankment was cut through, a concrete arch erected, and the permanent way restored to its normal condition for traffic. The work done between 2 a. m. and 10 p. m. on Sunday embraced the handling of over 2,000 tons of material. The embankment was dug through to the extent of 36 ft. in breadth and length, and to a depth of 15 ft. In six hours 600 cu. yds. of earth were excavated. A center was then formed on the earthwork, and about 190 cu. yds. of concrete were laid to form an arch, after which the earth was filled in and the line restored.

Protecting Iron and Steel against Rust.—In "La Revue Scientifique" a description is given of Gesner's method of protecting iron and steel against rust. The method consists in forming on the surface of the metal a double carbide of hydrogen and iron, which is extremely hard and adherent. In fact, a bar thus coated can be bent through an angle of 45 deg. without disturbing the layer. In carrying out the process, the articles are thoroughly cleaned from rust, but it is not indispensable to remove all oil or grease. A couple of gas retorts are placed alongside each other, and raised to a temperature of from 600° C. to 700° C. The articles to be treated are then placed in these retorts for about 20 minutes, after which a current of hydrogen is passed through the retorts for 45 minutes. A small quantity of naphtha is then introduced, the supply being maintained for 10 minutes. It is then stopped, the current of hydrogen being kept up 15 minutes longer, when it is stopped and the retorts allowed to cool to 400° C., and when this temperature is reached the doors can be opened and the finished product removed. The coating thus given has a bluish color.

The Ballestavy Iron Mine.—The Ballestavy iron mine, in the canton of Vinca, Pyrenees Orientales, and about 12 kilos., or 7 miles, from the Vinca, consists essentially of siderose, the portions of the deposit exposed to the air, and especially the ore extracted, losing their carbonic acid and passing to oxide of iron after a little while. The following are the results of two analyses made—the first by MM. Maret et Debattre, of Paris, and the second by an English chemist, Mr. Pattinson:

| | | |
|---|---|---|
| Oxide of iron | 80·68 | 77·00 |
| Oxide of manganese | 1·15 | 1·00 |
| Lime | 1·5 | .. |
| Magnesia | 0·30 | 0·50 |
| Alumina | 0·20 | 0·10 |
| Silica | 2·94 | 8·20 |
| Sulphuric acid | 0·24 | 0.10 |
| Phosphoric acid | 0·10 | 0·07 |
| Loss in the fire and not determined | 13·13 | 13·25 |

A month after order, 500 tons monthly can be put on rails at the Vinca station at the rate of 9 fr. (7s. 2d.) per metrical ton of 2,200 lbs. for a guaranteed content of 50%, with a diminution of 30c. (3d.) for every unit per cent. under, and increase of 15c. (1½d.) for each unit over 50% of metallic iron.

"Le Practicien Industriel."—A new fortnightly magazine of this name published by Dunod et Vicq, of the Librairie Speciale pour les Ponts et Chaussees, les Mines et les Chemins de Fer, Paris, has been started for affording technical information by means of questions and answers between correspondents. The last number records the composition of Hercules metal, which is of remarkable hardness, containing 88 parts of 2·5 per cent. aluminium-bronze, 10 of tin and 2 of zinc. A good joint for steam pipes is given by J. P. Brassac in the following terms: Mix and grind together, in equal parts, white lead, oxide of manganese and argillaceous earth, with linseed oil and varnish. In reply to a question as to the use of pulverized fuel, M. G. Bourhis observes that the most practical solution has been arrived at by M. Alexis Godillot, whose furnace consists chiefly of a special stepped grate, in the form of half a cone, composed of a row of flat semi-circular bars arranged in horizontal planes, one above the other, thus permitting the air to reach the fuel by horizontal layers through the large openings thus formed. The mechanical feed is affected by a cast-iron screw, called "helice a auget croissant," and for treating coal dust with advantage in these furnaces, M. Godillot establishes water circulation between the bars.

Treatment of Antimonial Ores.—Two plants are being built in South Australia for Mr. J. J. Christmas, who is tributing the Union Gold and Antimony mine, Redcastle (Vic.). The plants are being constructed to Mr. Christmas' designs, and are intended to give a practical trial to special processes for the treatment of antimonial and auriferous ores. Mr. Christmas claims to have overcome the difficulty of using lead as an amalgamating metal and a means of obtaining gold from ores. According to the "Australian Mining Standard," the method adopted by the patentee is to prevent the oxidation of the lead (which has always proved an obstacle to the successful application of the treatment) by passing the finely-ground ore, previously mixed with a small quantity of kerosene or similar compound of carbon and hydrogen, through a bath of the molten metal. The addition of kerosene as described, effectually prevents the oxidation of the lead, which alloys with the gold and silver, while the dry powdered ore, being much lighter than the lead, rises to the surface of that metal and is carried away as tailings. In the antimony process the native ore, or sulphide of antimony, is melted in large crucibles, and when on the point of cooling a quantity of molten lead is poured into the ore, stirred with an iron rod and poured into moulds to cool. When the ingot is turned out of the mould it is found that the lead, which has a greater affinity for gold than for antimony, robs the latter metal of its contents, and, having a greater specific gravity, settles at the bottom of the mould, from which it is easily removed and the gold recovered by cupellator or other methods. The plants, which are fitted with patent rockbreaker and rolls for preparing the ore, are equal in capacity to 15 head of stampers, and the cost of the processes is comparatively small. A smaller plant of the same design has just been sent away for the Lady Lily Gold-mining Company, Western Australia.

German Iron Production.—The output of the German blast furnaces in February, as reported by "Stahl und Eisen," was 434,704 metric tons, showing an increase of 31,330 tons, or 7·8%, over February, 1894. At the close of February there were 142 furnaces in blast, a decrease of one furnace only as compared with January. Of the production in February this year there was classed as forge iron 131,330 tons; as foundry iron 70,234 tons, as Bessemer pig 26,141 tons, and as Thomas pig 206,999 tons. Thus 233,140 tons, or somewhat over one-half of the total production of pig iron, was intended for conversion into steel. For the two months ending February 28th, the total production of pig iron was 924,279 tons, showing an increase of 94,487 tons, or 11·4% over the corresponding period last year.

A French Substitute for Fire Brick.—A correspondent of the London "Colliery Guardian" says: On account of the difficulty of obtaining fire bricks of uniform quality, except from Great Britain, M. Bebois-Reuleaux has devoted considerable attention to finding a substitute at lower cost. After many experiments he has succeeded in obtaining an infusible product containing from 95% to 98% of pure silica, which, mixed with another product, is said to insure perfect homogeneity, and at the same time absolute infusibility. The raw materials, which are found abundantly in several of the French departments, are so cheap that the bricks may be produced at half the cost of English for an equal quality. Some of these bricks tried in a blast furnace, at the hottest place, are reported by the manager to have stood thoroughly; and in the bridge of a puddling furnace, where only English bricks can withstand the heat, the new bricks were found quite satisfactory, as also in the bridge of a heating furnace worked for 13 hours continuously. At some steelworks, moreover, a half brick of the new manufacture was exposed during a whole day in a Siemens-Martin furnace, and was taken out without having undergone any change, and with the corners still sharp.

A New Arrangement for Boring Rods.—An arrangement for deep boring, by which the rods may be allowed to fall freely at any given moment, although normally made to reciprocate in the ordinary manner by mechanical means, has been patented by Herr Anton Raky, of Durrenbach, Elsass. A swing beam of timber, mounted on a timber stage, carries the rods, suspended from one end, with provision for turning them in the direction of their axis, and is made to reciprocate by the other end, through a connecting rod and crank on a shaft carrying a pulley, which latter is driven by belt from any source of power. The belt is, however, mounted loosely, so as not to turn the driven pulley, unless tightened by a roller mounted on the end of a counterweighted lever being brought against it. Herren Fauck und Company, of Vienna, have patented a joint for hollow boring rods, which must be made of the same thickness throughout. Both ends have squares on the outside for turning; and one end, conical, is threaded so as to screw into the hollow-conical threaded end of another rod. The same firm has also patented a boring clip for rinsing out the detritus from the holes To the hollow rod is fastened a pipe, in which the falling piece, provided on the outside with packing, slides tight so that the rinsing water, coming through holes in the clip and surrounding it, is enabled to enter by holes in the falling piece.

Puddling Direct from the Blast Furnace.—The works for puddling pig iron run directly from the blast furnace, put up at Hourpes in the center district of Belgium by Messrs. Bonehill, and now quite finished, and 100 tons of molten pig, the whole out-turn of the blast furnace, can be made into finished iron with the aid of the new process. Doubts have been expressed as to the feasibility and economy of this method; but the results obtained, which may now be considered as definitely acquired, have exceeded all expectations. It was thought that the sole of the furnace would not be able to stand the enormous heat given out by the incandescent pig, which is never allowed to cool down, a conclusive answer to which is given by the fact that repairs have not yet been found necessary to a single sole. Mr. Bonehill has taken out patents in the various iron making countries for his system, which may be described summarily in the following terms: The pig iron running from the blast furnace is received in a closed reservoir holding 35 tons, where it is maintained in a molten state by the combustion of gas from producers; and foundry ladles, holding half a ton or a little more, convey the charges to the puddling furnaces, which are fired by gas from producers attached to them. The operation is finished in about three-quarters of an hour, or half the usual time; and the waste in the furnace is comprised betwen 6 and 7%, the coal consumption being reduced to one-quarter that with the ordinary method. Common qualities of pig yield an excellent finished iron; and, including the economy of labor, the money saving effected by the new process is put, by the "Organe-Industrielle" of Liege, at 10s. per ton of puddle-bars produced.

Action of Nitrous Oxide on Metals and Metallic Oxides.—Paul Sabatier and J. B. Senderens, in a recent communication to "Chemical News," say: The oxidizing action of $N_2O$ upon metals and their oxides is very imperfectly known. It is known that potassium and sodium if slightly heated in this gas burn vividly, and that iron, manganese, zinc and tin if heated to redness are oxidized more or less quickly. The gas, carefully purified and dried, was passed over the substances in question at temperatures always below 500°. Cadmium heated to near the melting point, 320°, is gradually oxidized and volatilized, forming a brown deposit of oxide on the sides of the tube. Lead, obtained in a state of fine division on reducing litharge by hydrogen, is slowly oxidized at about 300°, and reproduces yellow litharge. Iron, reduced at redness in a prolonged current of hydrogen, burns below 170°, forming red ferric oxide. Reduced cobalt burns incompletely about 280°, being reconverted into brown cobaltous oxide (cobalt, 82·1%). Nickel, reduced, is oxidized with incandescence at 300°, forming monoxide. Reduced copper remains unchanged at 200°, but above 250° it is slowly transformed into red cuprous oxide. Near dull redness we may obtain a slight incandescence. Lower Oxides.—Greenish yellow manganous oxide, obtained by reducing the sesquioxide, is oxidized with incandescence about 350°, and forms a light brown $Mn_3O_4$. Tungsten bioxide, $WO_2$, of a blackish brown color, is transformed without incandescence at 450° to the blue oxide, $WO_2$, not mixed with tungstic anhydride. Molybdenum sesquioxide, $Mo_2O_3$, is slowly changed into the violet oxide, $MoO_2$. Brown stannous oxide, SnO, burns at 400°, forming white stannic oxide, $SnO_2$. Purple cuprous oxide, $Cu_2O$, prepared previously, is not oxidized at 350° in nitrous oxide; its weight remaining identical. Black vanadium sesquioxide, prepared by reducing with hydrogen vanadic anhydride, $Va_2O_5$, is not modified below 500°. Yellow uranium oxide reduced in hydrogen at bright redness forms uranous oxide of a maroon brown, which is not altered by nitrous oxide at 450°. If the reduction is effected at a lower temperature the uranous oxide is black and burns in nitrous oxide at about 400°, forming black oxide, $U_2O_5$.

The Power Absorbed by Rope and Belt Transmission.—Some time ago the Société Industrielle du Nord de la France carried on a series of experiments on a large scale to determine the comparative efficiency of ropes and belts in the transmission of power. The programme of tests was exceedingly simple. It was laid down that "with a constant resistance, and a power charged to overcome that resistance, every variation of the power must be credited to the means of transmission, which are alone capable of modifying the regime." The resistance was afforded by a bank of incandescent lamps, which were fed by a constant number of watts. The power was provided by the steam engine, and was calculated from the indicator diagrams. The measurement of the output of the dynamo was effected as follows: The difference of potential at the terminals of the bank of lamps was read on a Siemens & Halske torsion dynamometer, which gave indications to one-third or one-quarter of a volt. The current was maintained constant by a very sensitive galvanometer of the Widermann & d'Arsonvai type. The readings were taken by the Pogendorf method of reflection, and the sensitiveness of the method was such that it was necessary to decrease the sensitiveness of the galvanometer in order to keep the spot of light on the scale. The galvanometer was connected to two points about one meter apart on the main circuit, and was provided with a commutator by which the current in it could be reversed to correct any possible variation in the zero point. It was not sought to determine exactly by this method the number of amperes passing, but only to be certain that they were at all times the same. The trials were made on August 7th, 8th and 9th, 1894, and as described in London "Engineering," "the net result is that ropes and belts are equally efficient organs of transmission. The difference between the best and the worst of the figures is so small that the order might be reversed in another trial from local or other accidental circumstances. It is also to be noted that both the ropes and the belts were quite new, a circumstance that would tell more severely against the latter, as they would not have time to come to a good bearing surface, and hence would need to be run at a higher tension than would be required after some days of steady work. The slip of the belts, too, would have decreased as they became more supple and lay in more intimate contact with the pulleys, and their efficiency would probably have increased somewhat more than that of the ropes, so that they would, at least, have equalled them in economy."

## PATENTS RELATING TO MINING AND METALLURGY.

### United States.

The following is a list of the patents relating to mining, metallurgy and kindred subjects issued by the United States Patent Office. A copy of the specifications of any of these will be mailed by the Scientific Publishing Company upon receipt of 25 cents.

TUESDAY, APRIL 16TH, 1895.

537,452, 537,454, 537,455. Apparatus for Manufacturing Pipe. Alfred M. Hewett Kewanee, Ill. The combination with a furnace adapted to receive a number of metal strips of transversely movable drawing mechanism, and of stationary bell holders arranged in front of the furnace.

537,463. Composite Steel Plate. John A. Hunter, Philadelphia, Pa. This method of producing plates having a hardened steel face with a soft steel backing, consists in casting a mass of iron upon a backing of steel, converting the cast iron mass into steel capable of being hardened or tempered, and then hardening or tempering the same.

537,508. Process of Making Chlorine. Henry W. Wallis, London, Eng. Oxidation of the nitrosyl chlorid by subjecting it to the action of an excess of nitric acid in sulphuric acid.

537,514. Method of Manufacturing Alloys of Iron or Steel with Nickel. Niven McConnell, Munhall Pa., assignee to the Carnegie Steel Company, Limited, of Pennsylvania. The method consists in mixing with oxide of nickel carbonaceous reducing matter and iron or steel borings or turnings, charging the loose mixture into a furnace, charging iron or steel upon the mixture, and applying sufficient heat to cause the reduction of the oxide and its alloying with the iron or steel.

537,551. Pulverizing Apparatus. Austen Stevens, Brooklyn, N. Y. The combination of the upright column or wall provided on its vertical surface with a series of recesses in step-like order, a series of stamps within the recesses and vertical rods exterior to the surface of the column and connected with one or more of the stamps.

537,556. Apparatus for Collecting Gold from Moving Water Carrying Auriferous Matter. Albert G. Tingman, Indio, Cal. The apparatus consists of a flexible anchoring device, and a series of plates each secured by one end to such device and adapted to swing freely in response to the action of the flowing water.

537,572. Apparatus for Vaporizing High-grade or Fire test Oils for Heating Purposes. John P. Hayes, Philadelphia, Pa. An apparatus comprising a reservoir provided with a burner having an interposed retort and a heat absorbing and air and vapor mixing coiled body contiguous to said retort and to the normal position of the burner flame.

537,581. Apparatus for Handling Oil for Fuel. Walter S. Rockwell, New York, N. Y. The combination with a tank adapted for holding oil, water and an elastic or compressible medium, and means for creating a pressure greater than the atmospheric pressure upon the oil and water contained in the tank, of a pipe leading from the tank to the burners for supplying oil to the latter.

537,680. Process of Removing Piles of Coal. James M. Dodge, Philadelphia, Pa., Assignor to the Dodge Coal Storage Company, Naugatuck, Conn. The process consists in removing first the material on a line to form a radial channel in the pile, and second, removing the material in an annular path commencing at the radial line.

537,756. Ore-Concentrating Apparatus. Gustavis L. Cudner, New York, N. Y., Assignor to the Gold Amalgamator and Concentrating Company, Los Cervillos, N. Mex. A case or frame provided with a table, an inclined bottom and rollers combined with a belt made to travel about the rollers, strips secured to the belt, a pawl or catch made to engage the strips and an actuating lever for the pawl.

537,796. Hydrocarbon Furnace. Rudolp Altschul, New York N. Y. The combination with the firebox of a hydrocarbon furnace, of a chain of non-combustible porous or absorbent bodies arranged to pass into the firebox, an oil supply tank and mechanism for passing the bodies to and from the firebox and tank.

## PERSONAL.

Mr. F. Hearne Crockard has accepted a position as manager of the Jefferson Iron Works, recently leased by the Riverside Iron Works, Wheeling, W. Va.

Mr. Nicolai Andersen has resigned the position of chemist for the Gold & Silver Extraction Company, of Denver, in order to take a similar position with the Metallic Extraction Company, whose works are at Florence, Col.

Mr. Frank B. Nichols, vice-president and general manager of the Howard-Harrison Iron Works, of Bessemer, Ala., has gone to Japan to bid on two large orders for cast pipe, one for the city of Yokohama and the other for another Japanese city.

## OBITUARY.

Thomas P. Robb, died at Glenwood, Cal., on April 21st. In early days he was a resident of California and was the first Mayor of Sacramento.

Robert R. Morgan, one of the most prominent mine superintendents in this region, died at Wilkesbarre on April 22d, aged 74 years. He directed the opening of nearly all the important mines in the Wyoming Valley.

William S. Ellis, a wealthy and prominent iron manufacturer of Pottstown, Pa., died suddenly on April 24th, aged 53 years. He was a member of the iron firm of Ellis & Lessig, and was connected with a number of other enterprises.

Stancliff Bazen Downs died in New York City on the 21st. He was born here in 1859, and was graduated from the Columbia College School of Mines in 1882 as a civil engineer. He rendered valuable assistance in preparing a set of tax maps of the annexed district, in the Park Department, and was also connected with engineering work in the Twenty-third and Twenty-fourth wards. He was a member of the American Society of Civil Engineers.

Richard Sharpe, one of the oldest coal operators and richest men in the Wyoming Valley, died at Wilkesbarre, Pa., on April 22d, aged 82 years. He was born in England and came to America in 1826. For more than half a century he had been prominently connected with the anthracite coal mining industry, in which his partners during these many years were Frances Weiss, George Belsford, John Leisenring, Ira Courtright and Asa Foster. At the time of his death he was president of the Alden Coal Company.

George W. Baker, well known on the Pacific Coast and in the East, died at Wilcox, Ariz., on April 20th. Mr. Baker was born at Lancaster, Pa., and was a graduate of Harvard. Early in life he removed to California with the Forty-niners, and was City Recorder of San Francisco for four years during the early fifties, and also practiced law later. He went to Arizona to close the affairs of the Gun-Sight Mine for Eastern stockholders, and remained there, being engaged in mining, law and local politics.

Richard K. Sanford, for 25 years a clerk in the Auditor's office, at the Custom House, died in Brooklyn, N. Y., on April 24th, aged 72 years. He was a native of Fulton, N. Y. He served in the Assembly several terms and became a State Senator. When he removed to New York City he entered the customs service. His work had to do with domestic exports in the Bureau of Statistics. As a special accountant in that line he had no superior in the service. His personal qualities were estimable and won for him the high regard of his associates.

## SOCIETIES AND TECHNICAL SCHOOLS.

Engineers' Club of St. Louis.—The club met on April 17th. The minutes of the 415th meeting were read and approved. The executive committee reported the doings of its 187th meeting, approving the application for membership of Mr. Thos. Ashburner. He was balloted for and elected. An application for membership was announced from Mr. H. A. Wagner, general superintendent of the Missouri Electric Light and Power Company and Edison Illuminating Company. Prof. Leonard S. Smith, of the University of Wisconsin, Madison, Wis., read a paper on "An Experimental Study of Field Methods which will Insure Greatly Increased, Accuracy to Stadia Measurements."

The professor had had occasion to make an exhaustive study of stadia methods and the effect of work done at various hours of the day, and under varying conditions of the atmosphere. Two points were covered: First, a study of what is known as boiling or unsteadiness of the air, the effect of which he termed differential refraction. Second, the effect of this refraction upon the accuracy of stadia measurements.

He had spent considerable time on this work in connection with the international boundary survey between this country and Mexico, and his experiments were continued last summer at Madison, Wis. His researches which were very exhaustive, and, made with the greatest care, enabled him to formulate some general suggestions regarding stadia work, which, if followed, would enable that system to be employed satisfactorily on work requiring a greater degree of accuracy than has heretofore been deemed possible.

The Montana Society of Civil Engineers.—The regular monthly meeting of the society was held April 13th, in Helena. The meeting was called to order by President Keerl, the following members being present: Messrs. James S. Keerl, William A. Haven, H. C. Relt, Harry V. Wheeler and Forrest J. Smith. Mr. H. L. Cooper, member of the Western Society of Civil Engineers, of Minneapolis, and Mr. J. H. Farmer were also present.

Messrs. Haven and Wheeler were appointed tellers to canvass the ballots for admission to membership, and upon the completion of the count the president announced that Charles A. Molson, James M. Calderwood, David A. Herron and Wm. Munroe had been elected members of the society.

A letter bearing date of March 14th, from Walter H. Weed of the geological survey at Washington, D. C., asking the society's opinion as to the most important area in Montana in which to prosecute this season's work was then read. The secretary stated that owing to the fact that immediate action had been necessary, and as the matter was of prime importance to the mining engineers of the State, he had referred the matter to the members of the society residing in Butte. They had met and discussed the subject and were of the opinion that the area demanding immediate attention is the degree square included between the 113th and 114th meridians, and the 46th and 47th parallels of latitude, which covers the mines of Granite, Philipsburg, Georgetown, Cable, Combination, Sunrise, Yreka, Royal, Beartown, etc. The secretary also said that the Helena engineers were of the opinion that the most important area is that section which covers the mines of Basin, Lump Gulch, Red Mountain, Marysville, Jay Gould, Elkhorn, Radersburg, St. Louis, etc., and that he had written Mr. Weed, laying before him the two different opinions of the members, and that no doubt one of the two sections would be selected in which to carry on the government geological work this season.

Letters were read from Senator Babcock and Representatives Shropshire and Craven, expressing their appreciation of the society's efforts to obtain legislation favorable to the improvement of our public highways, and also expressing the belief that in the near future legislators would realize the great importance of this subject and grant proper legislation.

Mr. J. H. Farmer read a paper on "Steam Power in Relation to Our Mills and Manufactures, Compared with Water Power by Electrical Transmission." It entered into the details of construction and cost of building a dam across the Missouri River, near Stubbs' ferry, and transmitting the power by electricity to Helena. It also developed the facts that the cheapest results obtained by recent tests, made by two of the largest plants in the State, of the cost per horse power per year generated by steam was $71.50; while Mr. Farmer estimates that power can be transmitted from the dam to the city at $16.78 per horse power per year. A careful estimate shows that Helena now uses about 2,000 H. P.

## INDUSTRIAL NOTES.

The foundations are being put in for a new blast engine at the Rosena furnace, New Castle, Pa.

The Sloss Iron and Steel Company will add a new hot blast stove to one of its New Birmingham furnaces.

The Tonkin Boiler and Engine Works Company, Oswego, N. Y., has issued a new catalogue describing and illustrating some of its manufactures.

The Jeffrey Manufacturing Company, Columbus, O., has issued a new price list—catalogue, No. 42, fully illustrated with cuts of different machinery manufactured by it.

A dispatch from Washington, Pa., says that the Hess well has been sold to the Carnegie Line. All large companies, including the Philadelphia Company, are drilling in the vicinity.

The pipe foundry of the West Superior Iron & Steel Company, West Superior, Wis., is to start up on May 1st, after an idleness of two years. It will manufacture railroad culvert pipe.

The Ahrens & Ott Manufacturing Company, of Louisville, Ky., has recently installed a system of overhead trolleys, manufactured by the C. W. Hunt Company, for handling its materials.

The Standard Oil Company, which owned a one-fourth interest in the Mannington, Marion County, oil field in West Virginia, bought the remaining three-fourths on April 19th for $2,000,000. This field contains 8,000 acres and has 300 wells on it.

The following persons were elected directors of the Eddy Valve Company, of Waterford, N. Y., at a stockholders meeting held this week: President, John Knickerbacker; vice-president, H. C. Rogers; secretary and treasurer, Thos. A. Knickerbacker.

The Johnson Company of Lorain, O., has recently placed a large quantity of its stock. About $1,000,000 of the issue was offered for subscription in Cleveland, and was subscribed for by local capitalists in one day, further offerings being withdrawn.

For the first time in three years the Sligo Iron and Pipe Mill, at Pittsburg, Pa., is running in every department on double turn. The Carnegie Steel Company is running up to only one-third of its capacity at its several plants. Jones & Laughlin's are running up to 45% of their capacity.

The Berlin Iron Bridge Company, of East Berlin, Conn., is building an extension to the casting shop of the Waterbury Brass Company, at Waterbury, Conn. The new foundry which the Jackson & Woodin Manufacturing Company is now building at Berwick, Pa., was designed by the same company.

Judge Green, of the United States Court, at Trenton, N. J., on April 24th, appointed a receiver for the Oxford Iron and Nail Company, of Oxford, N. J. This action was taken upon application of the Farmers' Loan and Trust Company, of New York, which holds a mortgage on the nail company for $400,000, on which interest has been defaulted. Edmund Lukens, superintendent of the works, was named as receiver.

The Brown-Bonnell Iron Company, Youngstown, O., has been at work recently on orders for some of the heaviest angles and plates ever turned out by this concern. Angle iron for bridge work at Detroit, Mich., was recently shipped that was 6 × 6 in., ⅝-in. thick and 70 ft. long, the weight of each piece being about 2,600 lbs. Plate iron is being rolled for the same work which measures 71 ft. 6 in. long, and weighing from 2,600 to 3,000 lbs. per piece.

A press dispatch from Newcastle, Pa., says that every furnace shut down on April 23d. The men asked their employers to restore the wages of a year ago, and they gave the owners 24 hours to determine the matter. The latter declined, but decided to close at once. The men refused to coke down the furnaces and the clerks and owners were obliged to do the work. The old wages gave the keepers $2.25 per day, and they now receive $1.75; other hands are paid proportionately. The owners claim that when the old wages were paid iron was selling at $13 per ton. It now sells at $10.

Further progress has been made looking to the starting up of the Atlantic Works of P. L. Kimberly & Co., Limited, at Sharon, Pa., on the co-operative plan. Articles of agreement have been drawn up by which certain citizens of Sharon agree to subscribe a certain amount to guarantee the puddlers the 20 per cent. of their wages which they leave with the firm, the finishers being willing to take their own risk. P. L. Kimberly & Co., Limited, will pay the puddlers 80 per cent. of the Amalgamated Association scale wages for three months; at the end of that time, if the firm are unable to pay the 20 per cent. balance, the citizens who place their signatures to the agreement will be responsible for it.

## MACHINERY AND SUPPLIES WANTED.

If any one wanting machinery or supplies of any kind will notify the "Engineering and Mining Journal" of what he needs he will be put in communication with the best manufacturers of the same.

We also offer our services to foreign correspondents who desire to purchase American goods, and shall be pleased to furnish them information concerning goods of any kind, and forward them catalogues and discounts of manufacturers in each line.

All these services are rendered gratuitously in the interest of our subscribers and advertisers; the proprietors of the "Engineering and Mining Journal" are not brokers or exporters, nor have they any pecuniary interest in buying or selling goods of any kind.

## GENERAL MINING NEWS.

Standard Oil Company.—William Rockefeller, the president, and a majority of the directors of the Standard Oil Company, of New York, have filed with the county clerk the annual report of the company for the present year. They state the amount of the capital stock of the corporation to be $7,000,000, and the amount of the capital stock actually paid in also $7,000,000. The amount of debts due by the company does not exceed $3,000,000, and the amount of existing assets is at least equal to $10,000,000.

### ARIZONA.

#### Yavapai County.

Mountain Chief.—Through the Phœnix Real Estate and Mining Company, T. P. Carson, representing the Reymert Mining Company, of Reymert, Pinal County, has purchased the Mountain Chief mine, in Humbug district, says the Phœnix "Republican." The former owners of the mine were C. E. Champie, T. J. Hill, F. W. Hill and A. A. Walbridge. The consideration is $40,000. The Mountain Chief has been worked at times with good results. The absence of facilities for treating its ores has hindered its development. The Reymert Company, however, will supply these facilities and work the mine steadily.

United Coal Company.—This company, which recently took a bond on some property owned by G. W. Hull, near Jerome, is working two shifts of miners in the shaft, which is now down about 190 ft.

#### Yuma County.

Harquahala Gold Mining Company.—This company's returns for the month of March were as follows: Mill worked 29 days, crushing 2,600 tons of ore; estimated value of gold produced, $17,700; miscellaneous revenue, $750; total revenue, $18,450. The estimated total expenses were $18,300, leaving a profit of $150 for the month. The total estimated amount of profit on hand as of date March 31st was $21,855. Arrangements have been made and a plant

is now in course of erection for treating the accumulated stock of tailings at the mine. This stock amounts to from 60,000 to 80,000 tons.

## CALIFORNIA.

### Amador County.

(From Our Special Correspondent.)

Alma.—This mine, on the mother lode west of Jackson, is sinking a three-compartment working shaft to the 400-ft. level. A station is now being cut preparatory to crosscutting west to tap the vein.

Argonaut.—This mine, near Jackson, is down 670 ft. The hoisting plant now being erected will be one of the largest and most improved in this section.

Kennedy.—This mine is on the mother lode one mile north of Jackson. The 40-stamp mill is working on ore from the 1500 and 1750-ft. levels.

### Butte County.

(From Our Special Correspondent.)

Spring Valley Hydraulic Mining Company.—The Supreme Court has reversed the decision in the case of the Cherokee mine made by Judge Prewett, and holds that the bonds are a valid lien upon the property. The suit was between the bondholders of the Spring Valley Mining Company and the Bank of California and N. D. Rideout. The mine owed the bank, and Mr. Rideout and the bondholders brought suit for a foreclosure in their interests.

### Calaveras County.

(From Our Special Correspondent.)

Ellen Vannin.—This blue gravel claim, near Mokelumne Hill, has started up again. The water has been pumped out of the old works, and a horse power whim is in operation. The gravel being worked on averages $1.50 per ton. A new hoist and a mill will be put in shortly.

### Mono County.

Bodie Consolidated Mining Company.—The output of the Bodie mine for the week ending April 14th was 145¼ tons of ore from the openings between the 300 and 400 ft. levels. The estimated value of the ore is $40@$45 per ton. The south drift above the west crosscut 400 level has cut 8 in. of ore, which prospects about $15 per ton. The north drift 42 ft. below the 300 level has bunches of ore in the face that prospect well. The superintendent writes that they have started an upraise in the south drift and connected with a drift 22 ft. below the 300 level. The seam of ore in the raise is of good quality. They also started a drift north from the winze from the south drift 20 ft. below the 300 level. The seam of ore in the face is small, but of very good grade. The Bodie mill will next week begin crushing an accumulation of ore from the Bodie Consolidated Mine.

Bulwer Consolidated Mining Company.—During the week ending April 14th, 15 tons of ore were extracted from the stope above the north drift on the 150-ft. level and from the seam above the main north drift, 200-ft. level. The ore from the former point is of poorer quality. The seam above the main north drift, 200 level, is 8 to 10 in. wide and prospects from $20 to $25 per ton. Crushed during the week at the Bodie tunnel mill 170 tons of ore. Average battery sample, $21.54 per ton, tailings, $6.61 per ton.

### Nevada County.

(From Our Special Correspondent.)

West Harmony Drift.—Fifty men are now employed at this mine. Most of the work is being done in No. 8, where they are taking out about 150 cars of gravel a day. The red gravel is giving way to good blue gravel as they approach the east line of their ground. The gangways have been run from the east drift north to the rim, and stopes run east and west about 40 ft. on each side. Station No. 9 is now being cut in the end of the east drift. The 15-stamp mill is running steadily and the quality of the gravel is said to be improving.

Pennsylvania.—This mine, near Grass Valley, has struck a gold-bearing ledge 2 ft. in width about 15 ft. below level No. 6. The ledge is going toward the 700, and a crosscut is now being run to tap it at that point.

### Placer County.

(From Our Special Correspondent.)

Ackerman.—This mine, at Ackerman's Crossing, three miles from Auburn, is being worked on a 20% basis by Messrs. Berry, Duryea & Rees. They are now down 40 ft., where the vien shows 16 in. wide. Drifts have been run at different depths and the general character of the ore holds good.

### Siskiyou County.

(From Our Special Correspondent.)

Black Jack.—This drift mine, 1½ miles west of Hornbrook, has completed its new stamp mill and is employing 25 men.

## COLORADO.

### Clear Creek County.

Golconda.—This mine is showing up some large bodies of mineral, according to the Idaho Springs papers. It has recently been reopened by the former manager, and he has it under lease and bond. The vein was lost when it was originally worked, but the lessee found it within a day or two after taking the lease and bond, and he is now in a good body of milling ore. Some prominent Cripple Creek parties have bought into the lease, work will be pushed with more vigor, and development carried on during the entire year.

Maude Monroe.—Leasers on the Maude Monroe find the vein widening out and the ore carrying about 4 oz. in gold to the ton.

Eclipse.—A shipment from this property on Ute Creek, shows ore returning 400 oz. in silver and 1 oz. gold to the ton.

Franklin.—Ore from the Franklin has been shipped by the carload, netting $52 to the ton. It carries both gold and silver.

Inter Ocean.—A number of leasers on the Inter-Ocean are making more than wages. In the lower levels ore has recently been taken out which runs $45 in gold and $48 in silver to the ton.

### El Paso County.—Cripple Creek.

(From Our Special Correspondent.)

Arequa Mining Company.—The Trail, owned by this company and now being worked by Messrs. Wallace & Banta on lease, is situated on Bull Hill. The lessees, after intersecting the vein by a tunnel over 400 ft. long, drove north or under the known shoot in the level above. The length of the ore shoot being 60 ft., from present indications the ore shoot seems to be close. From rich float found at surface it would appear that there is another shoot of ore a few hundred feet south on the same vein.

Bogart.—This property, on the north slope of Rover Hill, will resume shipments next week. Two shafts are being sunk with all speed.

Cripple Creek Consolidated Mining Company.—The May Queen, which is situated in Poverty Gulch and adjoins the town limits of Cripple Creek, and made its initial shipment this week. The lessees feel encouraged over the returns, 3·96 oz. per ton.

Longfellow, Nos. 1 and 2.—These mines, on Bull Hill, are steady shippers, but the surface activity so noticeable two months ago is absent.

Mollie Kathleen.—This property is being worked by two sets of lessees, who have disregarded the old workings on Carbonate Hill, as they are working on the north of Poverty Gulch with gratifying results. About 29 men are employed. The lessees claim they can see their way to making steady shipments. The shafts are 60 ft. deep.

Ocean Wave.—This property on Battle Mountain, and worked under lease by John Himebaugh, shows a gradual increase in values with depth. The shipment about to be made is expected to essay 15 oz.

Portland Gold Mining Company.—The Portland mine on Battle Mountain employs 93 men. The entire force at work for the company is 147 men. The Anna Lee employs about 22 men. The shaft has now reached a depth of 600 ft. and a station is being cut. The shaft has recently been equipped with cages, etc., for the more economical handling of the ore. The character of the ore at that depth is entirely different from what it was at and near surface, as from a talcose deposit it has changed to a quadzoze in which rusty gold is occasionally seen. The new shaft on the Portland will be 5 × 15 ft. in the clear. Hoists and compressor have been ordered.

Rattler.—This property, which adjoins the Sheriff on the south, is now sinking a shaft 65 ft. on Sheriff, and the owners feel sanguine that they will intersect the Sheriff ore-shoot. The owners have done considerable work on this claim within the past few months; 300 ft. of development beside 450 ft. of trenching.

Raven Mine Company.—The Princess claim owned by this company has shaft-houses at intervals of every 50 ft. The depth of the shafts on this claim vary from 40 to 100 ft., and nearly all are producing mineral. The pay streak, as a rule, is not large, varying from 6 to 18 in., although at one point close to the phonolike dike the pay streak was nearly 4 ft.

Rubic.—This property, on Bull Hill, made its first shipment from the shaft after it had reached its first or 100-level. Not a few people who claim to know everything about the camp have strenuously contended that every shoot of ore found in this district cropped out at surface and that it is useless to prospect save at surface, whereas a dozen shoots of ore have been found by mining. The ore sampled over $100 a ton.

Sheriff.—This mine on Raven Hill is being actively worked by Lew Jackson. The shaft is now 75 ft. deep. The vein is 7 ft., just the size it was near the surface, but it now carries far greater values, all being pay ore.

Tidal Wave.—This property, a little east of the old shaft, on the Raven claim on Raven Hill, is now a steady shipper and is being vigorously worked by McCloskey Brothers on lease.

Viola.—This mine adjoining the Ocean Wave on the north slope of Battle Mountain made a shipment of several tons to the sampler which was so satisfactory that a carload will be shipped shortly to the smelter from the 35-ft. shaft. The character of the vein is a heavy dullish brown jasper fully 15 in. wide.

### Lake County—Leadville.

(From Our Special Correspondent.)

Bon Air.—Developments in this mine show satisfactory results and there is talk of another shaft being sunk in the neighborhood. Over 1,000 tons of rich ore were shipped in the past 30 days from this property.

Eliza.—On the upper contact workings drifting is vigorously prosecuted. The shaft is down 400 ft. and the diamond drill is down 200 ft. deeper to explore the contact.

Forest Queen.—This is one of the Golden Eagle's claims, and, as already stated, was leased about 6 weeks ago to a big company headed by A. R. Meyer, of the Kansas City Smelting Company; J. B. Grant of the Omaha & Grant, and others. All the preparatory work is completed, and the company is now ready to sink the Forest Queen shaft to the ore body. This shaft is located on Breece Hill and the new company expects to sink until the Little Johnny ore chute is reached.

Hulda Mining Company.—There is over 200 ft. of dritting being operated in the Garbutt shaft. The vein is a good one and shipments are steadily increasing. The ore runs an ounce in gold to the ton, but the silver and copper value is increasing.

Iszard.—These people have a rich streak of ore that is gradually widening out. Shipments will be steady as soon as the roads permit.

Leadville Gold Belt.—Great activity is noticeable in the districts known as the Gold Belt sections. Much new work is being carried on and within 60 days quite a number of new properties promise to be on the shipping list. Among the properties in the Gold Belt that are shipping now are the Little Johnny, 150 tons daily; Little Winnie, 10 tons; Little Vinnie, 25 tons; Iszard, 20 tons. The Big Six, Cleveland, Great Hope, Lillian, Lovejoy, Garbutt and Curran also make a number of good gold shipments during the month.

Leadville Gold Mining Company.—This company is operating the famous shaft in Big Evans gulch. The shaft is down nearly 100 ft., and a plant of machinery is being put in place so that sinking will be resumed by May 1st, and the shaft sunk to contact.

Northern Mining Company.—This company is operating the Capital shaft formerly run by the Clipper Mining Company, and which attained a depth of 500 ft. On account of water the old company abandoned operations, and a lease was given to the Northern Company headed by Mr. Page, Mr. Estey and others. These lessees are sinking the shaft to a greater depth, going below the contact and then drifting. While sinking they are at the same time making steady shipments from a good body of iron and carbonate ore that has been opened up.

Pilgrim.—This property, lying below the Lillian, is being actively developed by new lessees, and recent developments demonstrated the existence of a large ore body. A streak has been followed in for some distance which gave good returns of gold. An upraise run from these workings has opened up a 4-ft. body which is paying ore, although not as rich as the streak.

### Pitkin County.

Aspen Mining and Smelting Company.—This company's property is all under lease, and the company is not employing any men. The most of the ore in this property is too low grade to be handled at any profit while the price of silver remains below at least $1 per oz., says the Aspen "Times." It will be the policy of the company to lease the property, receiving therefor a small royalty, and enabling leasers by economical handling and long hours work, to make a little better than wages. The draining of the water from the Argentum-Juniata has left only 90 ft. of water in the company's lowest workings.

Aspen Sampling Works.—The new automatic sampler, just completed at this works, is working well, and will handle 250 tons of average ore in 10 hours.

Bushwhacker Mining Company.—Three levels are being run each way from the 180-ft. incline below the Cowenhoven tunnel in the Bushwhacker. Each of these drifts is in ore, but it is not a high grade. The company is working about 28 men, and about 30 men are working in its 10 blocks of leased ground. The company and leasers are shipping about 450 tons of ore per month.

Durant.—It is said that the lessees on the Durant are working about 175 men, doing systematic and profitable development work.

Holden Lixiviation Works.—According to the Aspen "Times" a new company is being formed in Denver to start again the old Holden Lixiviation works in Aspen. The new company has not yet been christened, but it is settled that its capital stock will be $400,000, divided in 4,000 shares. The first system of reduction to be tried will be the Crook process, which is said to have been profitably employed in the handling of ores around Central City. In case this is unsatisfactory, the old works will probably be remodeled into a smelter.

Regent.—This mine is shipping about 25 tons of ore per day, and employing 55 men. Nineteen leases being operated in the Regent mine are shipping about 10 tons of ore per day, and working about 65 men.

Smuggler Mining Company.—This company is working 5 air drills, part of them being employed in doing the excavating for the large sump which Manager Hallet is preparing for his new pumps, says the Aspen "Times." The sump will be built on a system new to Aspen. An excavation about 6 ft. square will be made below the bottom of the drift at the 600-ft. level, and it will be nearly 150 ft. in length. One of the large pumps is already in place. It is a duplicate of the Mollie Gibson's large pump, and has a 13½-in. plunger; the other pump, which is not yet in position, has a 12-in. plunger, and when both are working to their full capacity they will handle 4,000 gals. of water per minute, and in addition to this force the bailer can be

brought into action, which will bring up 750 gals. more. Not much ore is being shipped just at present, but enough of the white metal is sold to more than defray the expenses of the mine. There are 125 men employed.

Pueblo County.

Pueblo Smelting and Refining Company.—At the annual meeting of the company, at Pueblo, the following were elected: M. D. Thatcher, president; W. F. Havemeyer, vice-president; W. W. Allen, general manager; S. R. Ritchie, secretary and treasurer. Directors: M. D. Thatcher, Pueblo; J. A. Thatcher, Pueblo; W. F. Havemeyer, New York; Warner Van Norden, New York; E. H. Mason, Boston; D. H. Moffat, Denver; A. E. Reynolds, Denver.

GEORGIA.

Lumpkin County.

Findley Mine.—The new pump will be started shortly, as it is now almost completed. It is expected that it will prove a material advantage in operation of the mine.

IDAHO.

Lasalle County.

Baisley-Elkhorn.—This property is doing well, says the "Statesman." The mill has been so successful that it has accumulated a large quantity of sulphurets. The sulphurets are reduced in chlorination works connected with the property; but the accumulation of the concentrates has become so great that it has been found necessary to stop the mill until the other plant can catch up.

Bonanza.—This mine, near Clifford, has been worked for many years, and it is now shown that the old stopes have been within a very short distance of a parallel ore body of greater value than that which has been mined. This new ore body was discovered by a crosscut. It is from 3 to 4 ft. thick and carries from $30 to $40 per ton in gold. The 10-stamp mill is running on this ore and is turning out $5,000 a week, says the Boise "Statesman." A crosscut was run some years ago but developed nothing. It is now shown that the crosscut passed through a barren spot in the parallel ore body. The recently run crosscut is 200 ft. further on; the intervening ground has all been explored, and it is found to be all rich, the first drift having passed through at the only point that could have been picked out in all that distance without exposing ore body.

Shoshone County.

Mammoth.—This property, near Burke, has a force at work and doing nearly everything by contract.

Nellie.—The ledge was encountered in the Bear Hill tunnel of the Nellie mine last week and it is being followed toward where the main body is supposed to be as indicated by the work done in the upper workings.

Polaris.—E. M. Gilpin and S. P. Fairweather have started work on the Polaris mine, three miles below Osburn. This mine is owned by W. B. Heyburn and has stood idle for the past 5 years in spite of the fact that from it some very rich ore has come.

Sierra Nevada.—This mine at Wardner is shipping regularly as is also the Shoshone.

ILLINOIS.

Sangamon County.

A dispatch from Springfield says 300 miners of the Barclay, Spaulding, Williamsville and Springfield shafts decided to strike on April 23d rather than accept a reduction of 5c.

MICHIGAN.

Copper.

Calumet & Hecla Mining Company.—This company has declared its first dividend of 1895, $5 per share, payable May 11th to stockholders of record April 23d. For the full year 1894 $15 was disbursed in three payments; in 1893 and 1892 each, $20 was disbursed in four payments. The company has paid a total of $42,850,000 in dividends, including the one just declared.

Iron—Marquette Range.

A press dispatch from Ishpeming says that the Lake Superior, Lake Angeline, Winthrop and other iron mines in the Ishpeming district, employing 3,000 men, have made heavy sales of ore for 1895 delivery during the past 10 days, at prices said to range from $3 up to $3.50, a considerable advance over the prices of last year. This will involve increasing the force at the mines.

MINNESOTA.

Iron—Mesabi Range.

(From Our Special Correspondent.)

Adams.—This company has a second steam shovel at work cleaning up the stripped area for the milling operations, and is also working 100 men. The engine and boiler houses are under construction and the machinery is on the way. It will be in position inside the next two weeks. A shaft is down 95 ft. and through 54 ft. of excellent Bessemer ore, with the bottom of the deposit not reached.

Cincinnati.—This company, it is stated, will be operated as soon as the present litigation is over.

Fayal Mining Company.—This company is employing 100 men, and has put in massive and complete improvements. On the first level there are two drifts and one raise, and one double pocket with a capacity of 60 tons. The machinery has been started up and found to work excellently. Glen Brown has been made master mechanic for this mine and the Auburn.

Oliver Mining Company.—This company has begun shipping, sending its first train loads to the dock this week. This ore came from the state lease mine, from which it is said there will be little taken this year. The stripping on the other part, the Lone Jack, is not done.

St. Louis County.

(From Our Special Correspondent.)

Little Chief Mining Company.—This company has filed articles with H. M. Bradley, J. C. Mischler, R. C. Ray, V. A. Stearns and L. E. Judson, Jr., as incorporators. Its capital stock is $100,000. The company has some State leases on the west part of the Mesabi Range.

There is now scheduled a gold boom at the Manitou country, which lies some 25 miles to the northwest of the Seine River, on the Rainy Lake. The Manitou section is said by those who have been there to be richer than the Seine River, but as no gold has yet come from the latter, it is hard to say just what that means. A number of Seine and Rainy Lake prospectors have gone to the new section.

MONTANA.

Jefferson County.

Elkhorn Mining Company.—This company reports for the month of March that the mill worked 30 days and crushed 1,087 tons, the returns from which were as follows: Bullion produced in the mill, $26,213; 40 tons of smelting ore sold, $2,897; total returns, $29,110. The total expenses were $22,781, leaving an estimated profit of $6,329 for the month.

NEVADA.

Lander County.

Austin Mining Company.—General Manager Farnsworth, of this company, has returned to Salt Lake from Austin, where he went for the purpose of inspecting the properties of the company. He reports everything as being in good shape. The face of the tunnel is now in 3,500 ft., and good progress is being made. All the preparations for the resumption of operations at the concentrator are practically completed. The mill will handle 50 tons of ore daily, and the concentrates are to be shipped to Salt Lake City.

Nye County.

Sterling Gold Mining and Milling Company.—Final payment was made on the purchase of the Montgomery mine by this company on April 19th, and the property has been formally transferred to the new owners by Messrs. Harding and Shattuck. The purchasers are reported to have paid the sum of $75,000 for the property, which is said to be rich in gold.

Ormsby County.

Carson River Placer Mining Company.—This company, which works a dredge near Dayton, started up its plant last week.

Storey County—Comstock Lode.

Following are extracts from the latest weekly official letters of the mine superintendents:

Alta.—The yield of the mine for the week was two carloads of ore per day from the raise above the 825 level. Average assay, $32.78 per ton.

Belcher.—On the 300-ft. level the joint Belcher and Seg. Belcher, south drift, is in 151 ft. from the Belcher shaft. The face shows porphyry. We hoisted during the week and stored in the orehouse at the mine 44 tons of ore, the average car sample of which was $27.19 per ton.

Chollar.—A connection has been made between the raise from the 650 level and the bottom of the winze from the 650 level, which affords good ventilation. From this point and from the openings 60 ft. south of the north stope, between the 450 and 550 levels, we are extracting ore of fair grade, the yield for the week being 176 tons 1,600 lbs., which has been shipped to the Nevada mill for reduction, and the average battery sample of which was $26.

Consolidated California & Virginia.—In the 1,650 level on the sixth floor in the new ore body, the north drift 2 from the east crosscut, 30 ft. in from the crosscut has been extended 3 ft. in a quartz formation of low assay value. On the ninth floor the crosscut running east from the drift run south from the south end of stope at a point 8 ft. back from the face of the south drift has been extended to a total length of 43 ft., continuing in a porphyry and quartz formation assaying $5 and $6 per ton. On the twelfth floor the drift running south from the east crosscut to a point 18 ft. in from the mouth of the crosscut has been extended to a total length of 92 ft.; face in a porphyry formation. From the opening which was started from the drift run south from the end of the east crosscut from the main north lateral drift on the sill floor of this level carried up 43 ft., a north drift stared on the fourth floor has been run 10 ft. in low-grade ore. From these openings we have extracted 12 tons of ore, assaying $37.29 per ton. 1,750 level—From the end of the east crosscut started from the end of the drift running south from the south end of the stope on the fourth floor above the sill floor on this level a north drift has been advanced 20 ft., all the way into solid ore. It is 6 ft. in width at the mouth and widening to 7 ft. in the face. The top and bottom of the drift are in good ore, and the face is all in ore averaging $90 per ton. We have extracted from this locality during the week 97 tons of ore, assaying $55.90 per ton. We are cutting out on the west side of the south drift on the sill floor of this level at a point 15 ft. north from the incline winze sunk from the 1,700 level, and will extend the drift southward from that point. The total ore extracted during the the week from all points was 109 tons, the assay value of which was, per mine-car samples, $53 87 per ton.

Crown Point.—During the week ending April 16th a north drift was started from the fourth floor of the stope on the 700-ft. level to connect with a raise from the east crosscut. It is out 33 ft. and the face is in porphyry. The raise from the east crosscut on the 700 level is up 30 ft. and has been stopped at that height. The top is in a mixture of porphyry and streaks of quartz. We are preparing to run a south drift from it to connect with the north drift mentioned above. We extracted from the openings between the 600 and 700 ft. levels and from the 600 level 710 tons and 460 lbs. of ore, which was sent to the Mexican mill. The average battery assay for the week was $10.63 per ton, of which $9.50 was gold.

Hale & Norcross.—We continued stoping in small streaks of ore above the intermediate level, 30 ft. below the 975, and extracted during the week 14 cars of ore, assaying per mine-car sample $38.71 per ton.

Potosi.—The south drift on the 550 level from the bottom of the 450 level winze is out 170 ft.; face in porphyry and streaks of quartz, the latter assaying from $5 to $20 per ton. From the raise above this drift, which was started last week, we are saving some fair grade ore from a streak of pay 2 ft. wide in the top. The yield from there was 13 tons 1,200 lbs., the assay average car sample of which was $25.34.

Seg. Belcher.—On the 200-ft. level from the south lateral drifts a southwest crosscut was commenced, which is now out 8 ft. The face is in porphyry and quartz of no value. We hoisted during the week and stored in the orehouse 14 tons of ore, the average car-sample assay of which was $26.90 per ton.

NEW MEXICO.

Taos County.

Cochiti District.—Advices from Santa Fe report good developments in the Cochiti district. Last week a good strike was made in the lower levels of the Lone Star mine, owned by Thomas Lowthian, C. H. Toll and others of Denver. The ore is a free milling gold quartz. In the Crown Point also a rich gold strike was made on Wednesday. In the Victor and Washington mines good mineral has been located, the vein being from 7 to 16 ft. in width. The Lone Star is making regular shipments to Pueblo.

OHIO.

The executive committee of the Ohio State Miners organization met at Columbus, on May 23d, and called a delegate convention to meet at Columbus, May 1st, and establish a wage scale, which will probably be lowered.

OREGON.

Baker County.

Oregon Gold Mining Company.—The courts of Oregon have set aside the sale of this company's property, which was made to a syndicate of the old stockholders, headed by Basil Doerhoefer, to whom the mines were knocked down for $10,000. In the meantime, the money of the purchasing syndicate is lying in an Oregon safe.

PENNSYLVANIA.

Anthracite Coal.

Mine Inspector Lewis, of the Fifth Anthracite District, has just finished his annual report for 1894. The fatal accidents were 58 and non-fatal 95. The total production was 6,132,591 tons; total shipments, 5,313,100 tons; days worked, average for all collieries, 1,962; persons employed, 18,361; kegs of powder used, 112,800; steam boilers, 1,415; horses and mules, 1,912; mine locomotives, 94; dynamite used, 1,006,758 lbs.

Through the continued efforts of Joseph W. Walton, of Salem, a new coal field has been discovered in Shickshinny valley, about three miles from the outlet of Rocky Run, says the Hazleton "Sentinel." A vein 5½ ft. thick (dipping north) has been opened, and, as it is worked, increases in thickness. The coal is said to be of good quality and similar in character to that found opposite on the east side of the Susquehanna river, indicating a continuence of the same coal.

A branch of the United Mine Workers of America was organized at Pottsville on April 15th. John J. Rinn, president of the Anthracite District, No. 1, condemned the company store system. The Pottsville branch starts out with 209 members. There are now about 82 branches of the organization in the district, with a total membership of about 4,000.

The Pennsylvania Coal Company, of Dunmore, Lackawanna County, was rechartered on April 17th with a capital of $5,000,000. The treasurer is William E. Street, of Darien, Conn.

Lehigh Coal & Navigation Company.—The officials of this company at Summitt Hill are considering the advisibility of stripping the famous burning mine, and in this way quench a fire that has been raging underground for 30 years. Mining engineers have estimated the cost to be $250,000.

The low price of anthracite coal, the glutted market and much needed repairs have caused the

Van Wickle Coleraine collieries and the Evans colliery at Beaver Meadow to shut down. The Coleraine colliery is one of the oldest and best known collieries in the Lehigh region. It has a capacity of from 1,000 to 1,200 tons daily, although more than this could be taken out if there was any demand for it. The closing of this colliery will mean enforced idleness for 300 men and boys. While the shut down lasts a number of repairs will be made. In talking of the shutting down of this mine one individual operator said to a Hazleton "Standard" reporter: "The whole trouble is that there is a lack of confidence in the trade. The individual operators are willing to curtail production, but no assistance is rendered by the railroad companies. The railroad companies have a chance to make up on the freight, but the individual operators have nothing back of them. If the officers of the railroad companies were dealing with their own money they would soon fix the matter up. The Evans colliery at Beaver Meadow is apparently shut down until further orders. The Cross Creek colliery has had orders probably to the same effect, as their original intention to work three days this week has been canceled, and having worked only one day will do nothing further this week.

Nottingham.—A press dispatch from Pittsburg says that operations were resumed on April 16th at the Nottingham mine of Henry Floersheim, on the Wheeling division of the Baltimore & Ohio Railroad. Fifty of the old men returned to work, being tired of the strike. More men will follow, and the strike on that division appears to be broken completely. Mr. Floersheim now has the Germania and Nottingham mines running. The mine of Boyle Brothers, on the same division, will also be started on a non-union basis, and the other firms, whose pits are still idle, will follow. Six regular deputies and one dozen men who were sworn in at the mine are guarding the Nottingham. Sixty cents a ton is being paid at the Nottingham mine. Should the remainder of the strikers not return Mr. Floersheim says the mine will be filled up with imported colored men. Sheriff Clark, of Washington County, is on the ground, and while he does not anticipate trouble, says he will deal peremptorily with the strikers should they attempt to interfere with the men at work.

### Bituminous Coal.

The Convention of River and Railroad Miners of the Pittsburg district adjourned on April 22d, after adopting resolutions reaffirming the 69c. rate. Nevertheless, further breaks in the strike are expected. The convention was kept in line for the strike only by the promise of the men who have obtained the rate that they would assist the men on strike. When the convention began last week the strikers put in a demand for help. The delegates from the River Mines brought contributions from their lodges and also promised to contribute regularly hereafter, but the prospects are that this will not be done and that the strike will break up soon. The miners think if they hold out for another week or two until the lake season opens they will have the operators in a tight place. As many mines in the district are running non-union, the operators still idle declare they will do the same. The Nottingham Mine on the Baltimore & Ohio Railroad, is running to half its capacity and the owner says that 60 additional men will go to work at once.

Fifty miners who were supplying engine coal for the Baltimore & Ohio Railroad at the mine of Henry Floerscheim on the Wheeling Division, struck, on April 23d, against a reduction to 60c. a ton. They had been getting 69c., the rate having been granted by Mr. Floerscheim during the strike. Now that other mines are working at lower rates he says he is compelled to demand a lower price. He says the strikers will be replaced with new men before the end of the week. The strike at his Notingham mine is completely broken.

Germania.—A consignment of 50 men destined for the Germania mine of Henry Floerisheim, on the Wheeling division of the Baltimore & Ohio Railroad, is expected to arrive at the mine on April 26th. A meeting of the miners along the Wheeling division was held on April 24th and a number of men announced they would go to work for Boyle Brothers. Deputy sheriffs have been placed at the Germania mine to protect the new men. Boyle Brothers will also put in new men immediately unless the strikers return to work.

## SOUTH DAKOTA.

Harney Peak Tin Mining, Milling and Manufacturing Company.—Dr. A. R. Ledoux, the receiver of this company, is in receipt of advices that some promising gold prospects are being discovered upon some of the property of the Harney Peak Company. This company has several hundred claims in the southern Black Hills, many of which have never been prospected for tin or any other mineral. Our readers have been kept advised of the developments of gold in the southern hills, where it looks as if two mines had become steady producers with considerable reserves. These mines are not over two miles from the Etta group, belonging to the Harney Peak Company, and advices received by the receiver this week state that upon the Legal Tender group, patented by this company, some rich quartz has been found, assaying very high. The Samelias and Philadelphia locations have also been prospected, with encouraging results. It is possible that the Harney Peak Company may become a paying business enterprise, without considering the question of tin.

### Lawrence County.

Homestake Mining Company.—A press dispatch from Sioux Falls says that Mr. J. E. Carland, who was recently appointed special United States District Attorney for the prosecution of the timber claims against the Homestake Mining Company, will move the dismissal of the case already begun in the Black Hills district. The suit is for something like $700,000 claimed by the United States for government timber taken by the Homestake, so it is alleged, and appropriated to the company's use. It is understood that Judge Carland will at once recommence the action in Sioux Falls. It is known, however, that the dismissal of the case is without prejudice and is merely to clear the decks for action. During the past six months the prosecution has twice attempted to have the case dismissed without prejudice or transferred to the Sioux Falls district, but Judge Dundy decided that the case belonged in Deadwood, says the Deadwood "Pioneer."

## TENNESSEE.

### Campbell County.

Royal Coal and Coke Company.—A strike has taken place at the mines. No serious difficulty is expected, but the sheriff of this and the adjoining county are on the ground ready to prevent further trouble.

## UTAH.

### Juab County.

Bullion-Beck and Champion Mining Company.—The superintendent reports a good strike on the 800 ft. level of the Caroline mine, some 40 or 50 ft. ahead of the point at which it was anticipated a drift would cut into an ore body of some kind. The new ore body is galena, and where the drift cuts it is 4½ ft. wide. Assays made last week gave returns of 40% lead, 20 oz. in silver and a fair showing of gold.

West Cable Mining and Milling Company.—The directors of this company has decided to sink the shaft on the properties of the company, which are located some 1,100 ft. west of the Bullion-Beck, to a depth of 800 ft. if necessary. The shaft is now down 200 ft. It is not anticipated that the main vein will be cut much above 800 ft., for there is a great fault in Eureka Gulch at this point, and it is evident that the vein has gone down and dipped under the West Cable ground. When a depth of 400 ft. has been reached a steam hoisting plant will be put in. The annual meeting of the company was held in Salt Lake, on April 11th, and 203,250 shares were represented. The following board of directors was elected: President, A. B. Sawyer; vice-president, J. O. Gale; secretary and treasurer, George Ryan; C. L. Hawley and E. P. Lynch.

### Salt Lake County.

Considerable excitement has been caused by the discovery of auriferous gravel in Harkers' Canon, 12 miles west of Salt Lake City.

### Summit County.

Creole No. 2.—Work on the Creole No. 2 is being prosecuted vigorously, and good ore is being hoisted at a lively rate, says the "Park Record." The work in hand consists in tracing the vein recently encountered by means of a raise, to locate the apex, and good progress is being made. The vein is over 2 ft. wide, with a 16-in. pay streak that promises well. The Creole is not yet working, the leasers not feeling inclined to raise the bond under which the property was placed at the instigation of the owners and leasers of the Creole No. 2 when they replevined the ore about to be shipped from the Creole on the ground that it had been taken from Creole No. 2 ground. The matter will come up for a hearing early in May.

Crescent Mining Company.—Some weeks ago this company levied assessment No. 3 of 5c. a share, the object being to raise funds to pay off some of the company's obligations, chief of which was the interest account on a judgment against the company for $51,000, recently affirmed by the Supreme Court of the United States, amounting to $7,700, and to liquidate the expense incurred in caring for the mine during its term of idleness. This week the delinquent stock, amounting to nearly one-half for which the company is capitalized, is advertised, and unless payment is made on or before April 15th, will be sold at public auction to pay the assessment and cost of advertising.

Daly Mining Company.—On April 9th this company made a shipment of bullion consisting of 20 bars, containing 21,859 oz. of fine silver.

Ontario Mining Company.—According to the Salt Lake "Herald" the face of the extension of the Ontario drain tunnel from shaft No. 2 to shaft No. 3 is now in 333 ft., or about one-third of the entire length, and the ground has become so soft as to require timbering. It is anticipated that the hard formation will return, however. The tunnel is being driven at the rate of 10 ft. per day.

Wasatch Mining Company vs. Crescent Mining Company.—An order was entered in the Third District Court, at Salt Lake City, on April 3d, upon a stipulation, staying all proceedings in the case of the Wasatch Mining Company vs. the Crescent Mining Company, pending a ruling by the Supreme Court of the United States upon the case of the Wasatch Mining Company vs. Joseph A. Jennings et al., now pending before that tribunal. It was in 1888 that the Wasatch Mining Company began suit against the Crescent Mining Company to foreclose a mortgage in the sum of $50,000, with interest, given to secure the purchase price of certain mining claims. The Crescent Company resisted the mortgage on the ground that there had been a failure of title, and that no interest could be collected upon the mortgage, for the reason that interest was not provided for. Upon a trial of the case in the Third District Court, judgment was rendered in favor of the plaintiff, and this finding was affirmed by the Supreme Court of the Territory and United States Supreme Court. In the meantime an action had been filed by the Wasatch Mining Company against Joseph A. Jennings, a director of the company, to recover the possession of the claims in dispute in the other case, alleging that Jennings had taken the title to the claims in his own name, when he should have taken it in the name of the company, and judgment was demanded against him for the recovery of the property, with damages. In the lower court judgment was rendered in favor of the plaintiff, but the Territorial Supreme Court reversed the ruling as to certain items of damage. It was then remanded for a new trial, and referred to Thomas Marshall, but the second hearing has not been had.

### Tooele County.

Golden Gate.—According to the Salt Lake "Herald," a one-half interest in the Golden Gate group, Camp Floyd district, and also a half interest in a bond and lease on the property of the Viking Mining Company, in the same district, together with a good-sized spring and a number of smaller mining properties, were on April 5th sold by Messrs. Butts, Neill and associates to Captain John R. DeLamar. The price paid, according to the "Herald," is about $35,000. The values in the ores of the Golden Gate are said to be among the highe t in the district, the one drawback being the presence of a large amount of arsenic. The group is developed by some 700 ft. of shafts and drifts and now has a 21-ft. vein uncovered. The process to be adopted for the treatment of the ores will be determined by experiments to be made on an extensive scale at the DeLamar mill in the Ferguson district, Nevada, and the other plants of Capt. DeLamar's in Colorado, in addition to laboratory tests. Mr. George Kislingbury has been appointed superintendent of the Golden Gate, and has gone out to the camp with instructions to open up the mines in good shape. He will work as many men as convenient and push the development work.

Sunshine.—The incline on the Sunshine is now down 125 ft., and good progress is being made. Contracts for the new mill will be awarded within the next 10 days, says the Salt Lake "Herald." The new plant will have a crushing capacity of 200 tons, but for the present a leaching capacity of 50 tons will be put in.

## WASHINGTON.

### Pierce County.

Tacoma Smelting and Refining Company.—This company's report for the month of March shows 63 men employed; the pay-roll amounted to $4,723, besides which $640 was paid to woodchoppers and teams, making a total of $5,363. The product for the month was 2,400 bars bullion, weighing 247,817 lbs. and 56,700 lbs. copper matte. The contents of this bullion and matte are as follows, with the estimated values: 1,572·5 oz. gold, $32,504; 22,370 oz. silver (at 63c.), $14,093; 257.274 lbs. lead (at 3·05c.), $7,847; 28,740 lbs. copper (at 9¾c.), $2,694; total value of product, $57.138.

## WYOMING.

### Natrona County.

There is considerable activity in oil land holdings, and there are many inquiries from Eastern capital, says the Cheyenne "Tribune." More attention is just now attracted to the Wyoming fields than ever before. The Salt Creek producing wells now number five, with No. 6 nearly finished, and the piping and material now in transit to complete six more, all of which will be pushed to producers with all possible speed.

Pennsylvania Oil Company.—The oil refinery erected by this company at Casper is now in operation, turning out three grades of lubricating oil, heavy valve oil, engine oil and oil for car axles. Mr. Carman, the expert in charge of the refinery, expects to have the apparatus for refining the lubricating oil in a few days. Of the crude petroleum from Salt Creek 10% is illuminating and the balance lubricating oil, which sells for from $10 to $18 per barrel on cars at that place.

## FOREIGN MINING NEWS.

## BRITISH COLUMBIA.

Advices from Rossland, dated April 15th, state that considerably activity has lately prevailed in the camp. A group of claims, consisting of the Iron Horse, Monte Cristo and Enterprise, situated on Monte Cristo Mountain, between Red Mountain and Columbia Mountain, have been sold, it is said, for $65,000, by Samuel Stonge and Frank Cabana to Porter Bros., of Montana, with whom is associated Peter Larson, the well-known railroad contractor. This group lies close to the town of Rossland, and it is intended to immediately develop the Iron Horse and Enterprise.

The shipping of ore via Northport has ceased owing to the condition of the wagon road, which is practically useless for heavy freight. Small shipments are being made via Trail. There are large quantities of ore lying at the Le Roi and War Eagle

and other properties which cannot be shipped. The War Eagle company increased its force of miners a few days ago, but have been compelled to lay them off again owing to the lack of transportation facilities.

The Red Mountain Railway, which is to run from Northport to Rossland, began work a few days ago in order to preserve their charter, but it is understood that Mr. Corbin will not push the work till he obtains a charter from the Dominion government. The present charter is from the government of the Province of British Columbia, and under it work must be commenced by April 12th, 1895, and be completed by April 12th, 1897. The Canadian Pacific Railway has a line running from Nelson to Robson on the Columbia River. Robson is about 25 miles from Rossland, so the possibilities of this town for shipping facilities in the near future appear to be excellent. Much discussion has taken place here over the rumored negotiations of the Butte & Boston Company, of Montana, to purchase the War Eagle.

## BRITISH INDIA.

The output of the Colar Gold Field in India for March was 20,257 oz. gold, an increase of 4,177 oz over March, 1894. For the three months to March 31st the production was 59,287 oz., an increase of 10,378 oz over the first quarter of 1894.

## ONTARIO.

From an Occasional Correspondent.)

Canadian Copper Company.—The new smelter at the works of this company, for treating the ore without preliminary roasting, was started this week, and seems to work very well. It was devised by Mr. James Macarthur, the local manager of the company, and promises to lower the cost of producing the matte very considerably, and doing away with the noxious roast heaps.

Copper Cliff.—During the winter the working shaft at the Copper Cliff mine was sunk another 100 ft., making the eighth level, and the richest body of nickel ore that has so far been exposed on the whole range was struck in it. The ore is said to be largely pentlandite, carrying about 30% of nickel, although the deposit immediately above it on the seventh level was only common grade ore.

Crystal Gold Mine.—An important discovery has recently been made at the Crystal Gold mine, near Lake Wahnapitae and about 30 miles northeast of Sudbury. In a test shaft a few feet from the main surface vein, with the intention of drifting to it at a depth of 100 ft., a larger and richer lode was struck at 90 ft. from the surface. This new vein, which is evidently a blind lead, is 3 ft. wide with a foot of paying vein matter on each side, making 5 ft. in all. Both walls are clay slates. All the ore taken out of the 10 ft. sunk on it shows considerable free gold.

Evans Mine.—A new shaft is to be sunk on this property this season in order to take out the pillars of ore around the old shaft.

Stobie Mine.—Last week some 20 men were put to work at this mine, cleaning the snow and ice out of the open pit, which is worked as a quarry, on one side of the ore hill, and when this is done a large force will be employed in getting out ore. At first the ore from this mine was of rather low grade, but now averages pretty well up to 3% of nickel, and there is a very large deposit of it.

Sudbury District.—Nearly all the nickel mines of this district were closed down for the winter, from one cause or another, but with the opening of spring active operations are being resumed at most of them again.

Tam O' Shanter.—The owners of the Tam O' Shanter mine intend to complete the development work upon it this spring, so as to get the mineral patent for the property and put it on the London market for sale. A peculiar feature of this mine is a soapstone bed running parallel with the nickel deposit for nearly a mile on one side. The one is high grade with a great deal of copper in it, and occurs more like a vein than in any other property here.

## SOUTH AFRICA.

### Transvaal.

The cable dispatches report the gold output of the Witwatersrand mines for March at 184,915 oz. This is the highest point ever reached, exceeding by 2,841 oz. that of December, and showing an increase of 19,573 oz. over March last year. For the three months ending March 31st, the total production was 531,703 oz. of gold, against 466,556 oz. for the corresponding period last year; 313,200 oz. in 1893, and 264,454 oz. in 1892.

Witwatersrand Gold Production.—The monthly report of the Johannesberg Chamber of Mines gives the production of the Witwatersrand mines for the month of February as follows: Mill work, 110,691 oz.; concentrates, 7,314 oz.; tailings, 48,771 oz.; other sources, 2,610 oz.; total, 169,296 oz. At the usual rate of Witwatersrand gold, 800 fine, this would make 135,437 fine oz. gold. To obtain this production 236,425 tons of ore were worked at the different mills, which had altogether 2,250 stamps running. The average yield from mill work was 0·47 oz per ton. The quantity of tailings worked, nearly all by the cyanide process, was 221,552 tons, and the average production was 0·22 oz. per ton worked. The quantity of tailings, it will be seen, is being gradually reduced, as the old accumulations have been chiefly worked off, and the quantity treated now is only that resulting from the ordinary run. The largest production reported for the month by any one mine was by the Langlaagte Estate, 11,660 oz.; the Robinson coming second with 11,031 oz; the New Primrose third, with 10,657 oz., and the Crown Reef fourth, with 10,015 oz.

### Witwatersrand.

Witwatersrand.—The cable dispatches from Johannesberg give the gold output of the Witwatersrand for February at 169,295 oz., the smallest amount reported for any month since July last. The reduction from January is 8,168 oz., which is, of course, partly accounted for by the shorter month. The increase over February, 1894, is 17,425 oz. For the two months ending February 28, the output of the district was 346,758 oz. of gold, which compares with 301,184 oz. for the corresponding period in 1894; 201,626 oz. in 1893; 171,209 oz. in 1892, and 103,284 oz. in 1891.

## SPAIN.

Rio Tinto Company (Limited).—A final dividend has been declared for the year 1894 of 4s. per share, making with the interim dividend 8s. per share, or 4% for the whole year, after writing off £147,000 for depreciation, placing £75,000 to a reserve fund, and carrying forward £25,000. A year ago the dividend was 7s. per share, making 7% for the year. About £126,000 was written off, and £73,880 carried forward.

## LATE NEWS.

The Montana Ore Purchasing Company, of Butte, Mont., has declared its second dividend of $1 per share on the capital stock of 40,000 shares. The dividend, which is at the rate of 4%, is payable May 4th. The company paid its first dividend of the same amount as the present one in January last, so that the return has been 8% for the half-year ending with March.

The Tharsis Sulphur and Copper Company, at its meeting April 25th in Glasgow, Scotland, declared a dividend of 4s. per share equal to 10% on the capital of the company, payable on May 10th. This will call for £125,000. During the last 28 years the dividends paid by the Tharsis amount to £5,258,432. The annual dividends have ranged from 7½% to 40% on the capital stock. Debentures to the amount of £24,600 were paid off in 1894, leaving outstanding only £26,500, which will be paid off on or before next July, when they mature.

The directors of the Tamarack Mining Company of Michigan have called a special meeting of the stockholders for Monday, May 27th, to act on the questions of increasing the capital stock and of changing the date of the annual meeting. The directors recommend that the capital stock be increased 10,000 shares, making the total capitalization 60,000 shares, the new stock to be offered to stockholders pro rata at $100 per share, to be subscribed for before June 15th. Payments to be made in four instalments of $25 each, payable July 1st and October 1st, 1895, January 1st and April 1st, 1896. Stock not to be issued until the last payment is made. The entire proposed issue has been underwritten by responsible parties.

## COAL TRADE REVIEW.

NEW YORK, Friday Evening, April 26.

Statement of shipments of anthracite coal (approximated) for week ending April 20th, 1895, compared with the corresponding period last year:

| Regions: | Apr. 20, 1895. Tons. | Apr. 21, 1894. Tons. | Difference. |
|---|---|---|---|
| Wyoming | 383,968 | 391,062 | Dec. 7,094 |
| Lehigh | 101,854 | 117 615 | Dec. 15,761 |
| Schuylkill | 212,203 | 195,956 | Inc. 16,247 |
| Totals | 698,025 | 704,633 | Dec. 6,608 |
| Total for year to date | 11,939,052 | 9,472,110 | Inc 2,466,942 |

PRODUCTION OF BITUMINOUS COAL, in tons of 2,240 lbs., for week ending April 20th and year from January 1st:

| Shipped East and North: | 1895. Week. | 1895. Year. | 1894. Year. |
|---|---|---|---|
| Phila. & Erie R. R. | 3,050 | 28,306 | 21,234 |
| Cumberland, Md. | 66,510 | 833,012 | 977,724 |
| Broad Top, Pa. | 9,900 | 149,822 | 113,872 |
| Clearfield, Pa. | 89,100 | 2,164,660 | 1,100,983 |
| Allegheny, Pa. | 32,575 | 540,731 | 461,139 |
| Beech Creek, Pa. | 55,675 | 971,890 | 735,493 |
| Pocahontas Flat Top | †108,275 | 997,725 | 736,617 |
| Kanawha, W. Va. | 55,678 | 1,030,454 | 738,411 |
| Totals | 430,989 | 6,716,510 | 4,793,214 |

† Two weeks ending April 13th.

| Shipped West: | 1895. Week. | 1895. Year. | 1894. Year. |
|---|---|---|---|
| Pittsburg, Pa. | 42,250 | 611,554 | 427,045 |
| Westmoreland, Pa. | 38,325 | 672,205 | 471,840 |
| Monongahela, Pa. | 6,850 | 231,896 | 159,085 |
| Totals | 87,426 | 1,515,655 | 1,057,970 |
| Grand totals. | 518,415 | 8,176,487 | 5,851,184 |

Production of coke on line of Pennsylvania Railroad for the week ending April 20th, 1895, and year from January 1st, in tons of 2,000 lbs.: Week, 94,006 tons; year, 1,781,139; to corresponding date in 1894, 1,022,572 tons.

### Anthracite.

The sales-agents held their usual monthly meeting on Thursday at the office of the Pennsylvania Coal Company in this city. A few hours were spent in discussing the situation. Nothing else was done. If the presidents themselves can do nothing, the agents can scarcely be expected to do more.

Prices were left unchanged. The official circular is too low to be profitable, but at the same time it happens to be too high to obtain freely. It was recognized that the trade should have some basis on which to work during May. The output for next month was variously suggested at from 2,750,000 tons to 3,500,000 tons. Several of the sales-agents had no authority to agree to so great a tonnage as 70% of last June's output and so the meeting adjourned until next Tuesday. In the meantime the sales-agents will confer with and receive instructions from the presidents, so that at the next meeting they will be prepared to act. What sense there can be in holding these sales-agent' meetings when the companies are at loggerheads in the matter of allotments it is difficult to see. The agents, doubtless, can exchange their views as to the conditions of the trade, but as the same views are practically held by all of them, and as some of the agents are church members and consequently dislike to hear the profane though alliterative epithet usually prefixed to the "dull" when alluding to the trade, there cannot be much profit in such discussion. Producers apparently realize that under existing conditions arbitrary prices cannot be successfully maintained. And as to restriction it is manifestly absurd to expect the producers to adhere to it. Granting that each interest conscientiously restricts its production to the tonnage to which it considers its due, the total output will show an excess of about 20% over the amount "recommended" by the sales-agents. Until the question of percentages is settled it is practically useless for the sales-agents to advance prices or to name a fixed tonnage for the ensuing month, and as for the moral effect of such an action, that is, the "stimulation" which it is supposed to exert on the buying, nobody, not even the most sanguine sales-agent, has any faith in it to-day.

The market itself continues to drift along as best it can. It continues dull and unsatisfactory. New orders are infrequent and small, and the present movement of coal consists of deliveries on old orders. The companies are not taking new business at below the circular. This fact is acknowledged by the sales-agents themselves. At the same time we find no great disinclination on their part to swell old orders or to extend deliveries, so that while their asking prices are $3.35 for stove, and $3.20 for stove, broken and egg, f. o. b., sales at these figures are conspicuous by their absence. We know that a prominent seller whose product is of good grade accepted an order for stove coal this week at $3.10 on board, because, as he himself admitted, it was the best price he could get. The other sizes sell for 10c. less. Fair quotations, that is, such quotations as no buyer need have any difficulty in obtaining, are: $3.10@$3.20 for stove; $3@$3.10 for broken, chestnut and egg; $2.15@$2.40 for pea; $1.80@$1.90 for buckwheat No. 1, and $1.30 @$1 40 for buckwheat No. 2, all on board. And we would not assert that these are "rock-bottom" prices.

If producers of anthracite coal were like producers of iron ore in that the price of their product depended upon the demand and the supply the market would be different. Since the productive capacity is greater than the consumptive, prices would drop until the weakest sellers were forced to the wall, and thenceforward would rise or fall with the demand. It would become a question of the survival of the fittest, and this the unfittest have tried to avoid by establishing the half-hearted sort of "pool" among the carriers of anthracite coal. Now that the transportation companies seem unable to agree on their allotments conditions prevail which are precisely what producers desire to avoid. Dealers are not buying save as they need coal. To be sure, this is rather satisfactory to sellers who are still hopeful of an entente cordiale, and, therefore, believe that present values are as low as they are likely to go this year. There is no inducement to book orders for extended delivery, for if prices should by any chance advance sellers would make so much less profit, and if they should decline the customer would insist on a corresponding reduction.

This week a consumer asked his usual source of supply to accept an order for delivery prior to November 1st at a price equivalent to $1.40 at the mine. This was refused by the seller in terms more forcible than elegant. Similar offers have been made by other buyers, and though not successful, they serve to show the prevalent impression that prices will continue to rule low in this year of grace to coal buyers. It makes the prospect all the more gloomy to producers since such impressions are difficult to overcome. The old argument that "people must use coal and therefore must pay our prices" which sellers formerly advanced is not very sound to-day. We exposed its fallacy a year ago when the prospects were infinitely brighter than they are to-day, and we say so now.

The transportation companies are apparently no nearer a solution of the percentage question than they were a fortnight ago. On Monday last President Olyphant of the Delaware & Hudson Canal Company, President Thomas of the Erie, and Vice-President Baker of the Jersey Central, with Adrian Iselin, Jr., and F. W. Whitridge of the Reorganization Committee, went to Philadelphia to meet the Reading receivers. All three of the receivers attended the conference, and also Messrs. George H. Earle, Jr., and Howard Y. Cook, Philadelphia members of the Reorganization Committee. The Reading receivers refused to consider any proposition that did not provide for an allowance to the Reading of 21% of the total production as its proportion Receivers Lowber, Welsh, and Paxson were as positive on this point as

Mr. Harris had been in his letter to the Chairman of the committee of five.

The following statement was issued in Philadelphia by the Reading receivers after the meeting adjourned: The receivers expressed a desire that some way should be found of harmonizing the difficulties of the trade and their willingness to work to that end. They stated at length their reasons for believing that the Reading Company is entitled to 21% of the total output of the anthracite tonnage, and declined to recede from their position.

In respect to the proposal for arbitration the receivers explained that they understood that they had no right as receivers to refer to an outside tribunal the question as to how the business of the company should be conducted, and expressed their belief that if the basis of a reference could be agreed upon it would be then found that no arbitration would be necessary, as the only remaining questions would be those of arithmetical calculations.

And there we are. The Reading will not budge from the stand which it has taken and the other companies will not consent to the 21% proposition. The friends of the Reading describe that much maligned corporation's position in the matter as "The Turning of the Trodden Worm." The enemies of Reading, who see in the determination to get 21% the ruthless destruction of what little stability there remained in the trade after the disastrous year of 1894, couple the names of the Reading's receivers with that of a quadruped long famous for its unreasoning stubbornness. But the interchange of such compliments does not bring the question any nearer to a solution. We have in previous issues discussed at some length the merits of the case as adduced by either side, and no new argument has been brought forward lately. The trade, which is what concerns us, is in a most unsatisfactory condition, from a producers point of view. And there does not appear at this writing any reason why throughout the current year anthracite coal should not be sold for a much lower average price than in 1894. This is bad for those educational and charitable institutions, a part of whose endowments is invested in the stocks of certain coal roads, but the general public will not have much cause for complaint. It can stand with cheerfulness a long period of cheap coal.

### Bituminous.

Intrinsically, the condition of the soft coal market remains practically as reported last week. The demand is moderate, and prices are being fairly maintained.

The great majority of the season contracts have been made, but deliveries on these are delayed on account of the high freight rates prevailing in the vessel market.

Sea freights are unreasonably stiff for this season of the year. This is due to the fact, that with the exception of some large sized ones vessels have been very scarce. Rates are as follows from Philadelphia and Baltimore: To Boston, Salem and Portland, 80@85c.; Providence, New Bedford, New Haven, Bridgeport and other Sound ports, 75c.; Wareham, 90c.; Lynn, 90c@$1; Newburyport, 95c.; Portsmouth and Bath, 85@90c.; Dover, $1.25; Saco, $1; Gardiner, 90c., and Bangor, 90@95c.

Shipments of a large tonnage of coal have been deferred as shippers are not willing to pay these rates. Small vessels are in small supply and are readily taken, chiefly by those consumers who are in urgent need of coal. A decline of 10c. should take place within a month, and 10c. a ton in a 1,000-ton order is worth waiting for. In consequence of these deferred shipments the Pennsylvania Railroad is blocked with loaded cars. This glut will continue until rates decline and shipments are freely made from Greenwich.

Prices at Philadelphia & Baltimore though somewhat firmer are no higher and may be quoted at $1.75@$2.10 according to grade.

The all-rail line trade continues good. Transportation from the mines to tide, as already stated, is not good owing to the fact that while shipments from the mine continue without any appreciable decrease, there is not much chartering of vessels at shipping ports. At Norfolk, however, shippers are chartering freely at top figures.

**Buffalo, N. Y.** April 25.

(From Our Special Correspondent.)

The anthracite coal trade is generally quiet and prices nominally unchanged. Dealers are awaiting the settlement of the percentage question, and therefore do not enter into contracts, that is, as far as the public knows.

Bituminous coal quiet, as buyers only take for their immediate requirements, not anticipating any advance in quotations. Manufacturers busy. The demand for vessel use has commenced.

Coke in good request and firm.

Navigation is open here and at all points around the Lakes excepting Superior, and there vessels will commence moving, at latest, next Friday, the 26th. The movement of craft thus far very light, and vessel men are not at all anxious to commence their season's business, as freights are low. Lake freights are nominal on coal.

The propeller Wolf arrived here last Sunday at noon from Chicago, the first vessel from the Upper Lakes. She had but little trouble in making her way.

It is stated that Masillon coal figures have again been cut. Lump is selling at $1.50 per net ton, and the retail price has dropped from $3.25 to $2 per net ton.

The Grand Trunk Railway of Canada has asked for tenders for anthracite coal, to be delivered from June 1st, 1895, to May 31st, 1896; size not stated, nor quantity, nor place of delivery.

The Consumers' Gas Company, of Toronto, will receive bids for 30,000 net tons of Youghiogheny or Westmoreland lump gas coal on or before April 29th. The coal to be screened over 1½-in. screen, and delivered in equal monthly quantities between May 15th and December 15th, 1895, either on vessel at Toronto, ex-harbor dues, or on cars at International or Suspension bridges.

The nominal lake freights on coal from Buffalo are as follows: To Chicago, 40c.; to Milwaukee, 40c.; to Duluth, 15c.; to Toledo, 25c., and to Detroit, 20c. per net ton.

The canals of New York State will be opened May 3d, excepting the Oswego, which will be closed a few days longer to complete repairs of a broken aqueduct.

A large number of steam plants now burning oil in Chicago will resume coal as a fuel as early as they can change their furnaces.

At Buffalo bids were opened by the Board of Public Works on Wednesday for supplying coal for the pumping station of the water works. The bidders were Mark Packard, Joseph E Gavin & Co., J. H. & W. H. Ball, the Riverview Coal Mining Company, the Philadelphia & Reading Coal Company, Thomas Loomis & Co., Bell, Lewis & Yates, the Shawmut Coal Mining Company, and E. L. Hedstrom. The Hedstrom bid was the lowest. The bid for soft coal was $1.57.50 a ton, which, as the city expects to use about 25,000 tons, would be $39,375. For Scranton grate coal delivered on cars the bid is $81,500 for 25,000 tons, and the same coal delivered by canal and put into the bins at the water works, $84,000.

No ice in Duluth harbor at last account.

Navigation is open between Nova Scotia ports and Toronto, Lake Ontario.

The output of iron ore from the Lake Superior districts this season is expected to reach 10,000,000 tons.

**Chicago.** April 20.

(From Our Special Correspondent.)

The past week has shown no change for the better in the anthracite coal trade of Chicago, neither has it brought any prospect that business will be very soon. There is yet a fair quantity of coal moving on old contracts, but new contracts for any good-sized quantities are few and far between. Buying still continues along in the old rut, that of just enough for immediate want, and, as a rule, quick delivery is asked. The weather remains cool, but that fact appears to have but little effect on coal sales. Some activity is noted in the bituminous coal trade, brought about presumably from the fact that there are prospects of those who have been using oil fuel returning to coal, oil having advanced so much in price. The West Chicago Street Railway has already advertised for bids on furnishing 200,000 tons of soft coal. As it is now using oil entirely it is probable that it is testing the coal market, and it is merely a matter of oil being thrown out if coal be the cheaper. It is said that should the price of oil not decrease any by May 1st a great many concerns now using that material for fuel purposes will return to soft coal, and as the Standard Oil Company has already notified consumers that after May 1st contracts would not be renewed on present basis, the bituminous coal trade has within sight a possible boom. Both hard and soft coal are accumulating on the tracks, the latter, through speculative purposes, already being in far greater proportions than demand. Prices are yet weak and fluctuate rapidly.

Coke is in fair demand at increased prices.

**Pittsburg.** April 25.

(From Our Special Correspondent.

**Coal.**—The Ohio river is too low for coal boating. Since our last issue pretty much all the coal mined was sent to the lower markets, which are well supplied; prices are unchanged. Many of the railroad works are running at 60c., others are holding out for 69c. The delegates have returned with instructions to stand firm for the 69c. Operators stand by their ultimatum and decline to hold a joint conference. The miners are more determined than ever to continue the strike. This was the statement given out by district secretary Warner, of the United Mine Workers, who said that the instructions of the delegates were of the iron clad order. They came back with lots of money to carry on the fight; some brought $1, some $2. There is a strong sentiment, however, on the part of the miners to have a conference with the operators and we still believe they will meet us; the talk of importing men or of employing new men is not as strong as it was last week. Several operators believe their old men will return to work in a short time and will wait and see what the result will be.

A report from Cleveland says the Ohio and Pennsylvania Coal Company closed a contract for 50,000 tons of coal on Monday for delivery on the docks of the Chicago and Northwestern railway at Green Bay.

**Connellsville Coke.**—Shipments took a big drop last week. The furnacemen are making a big fight against the advance in price, and the coke operators are fully as obstinate in an effort to maintain the same rate put into effect April 1st; that was the rate fixed for an indefinite period, and no coke is being sold for less. The furnacemen claim they cannot pay the advance and are cutting down their orders, but the coke operators are just as prompt in blowing out ovens. The shipments fell off over 1,000 cars, and production decreased 20,500 tons, the production being 8,500 tons in excess of the demand, and this much has been stocked in the yards at the ovens. The number of ovens blown out was 1,100, reducing the number in operation to 14,146, increasing the idle list to 3,666. The running order was reduced to 493 days; unless a turn for the better a large number of ovens will be blown ont. The shipment from the region for the week amounted to 6,600 cars, distributed as follows: To Pittsburg, 2,021 cars; to points east, 1,448 cars; to points west of Pittsburg, 3,131 cars. Western shipments decreased 750 cars, Eastern shipments, 155 cars, and Pittsburg, 95 cars; total, 1,000 cars. Prices unchanged.

**Shanghai, China.** March 15.

(Special Report of Wheelock & Co.)

**Coal.**—Since our last letter the demand for Japanese coal has been slightly better, but there have been few transactions, chiefly on account of high rates of freight and the difficulty of getting good quality of coal. There are large stocks of inferior kinds, but few sales of these. In Welsh steam coal there has been little or nothing doing and several cargoes have been disposed of. We quote as follows: American anthracite, 12 taels per ton ex. ship; Welsh Cardiff, 11·75 taels; Australian, 11 taels for Newcastle and 10 50 for Wollongong; Japan, 4·50 to 5·50 taels for such sorts as can be obtained.

**Kerosene Oil.**—During the past fortnight the market took quite a spurt, and prices for all kinds advanced rapidly, with the result that a good deal of speculation took place, Devoes having changed hands as high as 1·55 taels, and Russian at 1·45. The market closed strong; present stocks in godowns are 946,291 cases American, and 231,628 cases Russian. We quote for American 1·55 taels per case for Devoes and 1·50 for Chester; for Russian 1·47½ taels per case for Batoum, and 1·45 taels per two tins for Batoum bulk.

## IRON MARKET REVIEW.

NEW YORK, Friday Evening, April 26, 1895.

**Pig Iron Production and Furnaces in Blast.**

| Fuel used. | Week ending April 27, 1894 F'ces. | Tons. | April 26, 1895. F'ces. | Tons. | From Jan.,'94. Tons. | From Jan.,'95 Tons. |
|---|---|---|---|---|---|---|
| Anthracite. | 34 | 17,987 | 34 | 20,097 | 266,132 | 351,677 |
| Coke... .... | 92 | 107,561 | 119 | 132.360 | 1,552,975 | 2,327,504 |
| Charcoal... | 18 | 4.010 | 18 | 3,859 | 67,218 | 72,859 |
| Totals .. | 144 | 129.558 | 171 | 156,316 | 1,886,325 | 2,632,040 |

The past week has shown a material improvement in the condition of the iron and steel market. As shown in the letters from our correspondents the movement is general in all of the large iron markets, and at some points very heavy buying is noted. The Southern furnaces have advanced pig 25c. a ton, and while no other sales at this printing are noted in the East, some have been made at other points. The demand is such that furnacemen feel safe in holding steady and refusing concessions such as have been given for many months past when there was competition, in order to secure orders. The improvement is not looked upon in the nature of a "boom." Both furnacemen and consumers seem to agree that whatever advance there may be will be gradual and proportioned to the relations between supply and demand. At the same time it is generally admitted that the market will steadily gain in strength, in spite of the fact that the demand for steel rails, generally regarded as one of the barometers of the trade, has been very slight.

The movement is most largely in pig iron, showing that the foundries and machinery manufactories are expanding their trade.

NOTES OF THE WEEK.

Press dispatches from Connellsville say that coke production and output took another tumble last week, the former being in the neighborhood of 12,000 tons less than on the week of April 13th. Among the consumers there is still considerable uncertainty about the price of coke. It is intimated that the next move on the part of the coke operators will be to put the circular rate of furnace coke up to $1.50 per ton, and proportionate advances will be added on the other grades. The iron men look at this with disfavor. They say the present rate of $1.35 should be established first. Last week some sales were made as low as $1.20. The efforts to bring about a combine among the coke operators have not been dropped, but the same obstacles that were in the way when the matter was earnestly discussed the early part of the week are still to be encountered.

**Pig Iron.**—There has been rather more business during this week than last, some fair-sized orders being taken. Southern iron has advanced 25c. in some grades, though sales at this figure have been few. The market is firm, however, and there is less willingness to grant concessions for orders. Quotations remain as follows: Northern brands, No. 1 X, $12@$12.50; No. 2 X, $11@$12 gray forge, $10@$11; Southern irons, No. 1 foundry, $11.50 @$11.75; No. 2 foundry, $10.50@$11; No. 1 soft, $10.75 @$11; No. 2 soft, $10.25@$10.75.

**Spiegeleisen and Ferromanganese.**—There has been no material movement in these products. Quotations are: $18@$19.50 for 20% domestic spiegeleisen at furnace, and $19.50@$20.50 for for-

eign, and $47@$48 for 80% ferromanganese at tidewater.

**Billets and Rods.**—This market has been practically at a standstill, no movement being noted. Quotations at tidewater are as follows: Billets, $17.25@$17.75, and domestic wire rods, $23.50@$24.

**Rails and Rail Fastenings.**—There has been but little trade in these products. Rail quotations remain: Standard rails at tidewater, $22.75. In rail fastenings prices remain: Fish and angle plates, 1@1·05c. at mill; spikes, 1·30@1·35c.; bolts and square nuts, 1·80@1·95c.; hexagonal nuts, 1·95@2·05c. delivered.

**Structural Iron and Steel.**— There has been a little more business in these lines than during last week, but no orders for more than small quantities have been noted. Prices are firm. Quotations are: Angles, 1·20@1·35c.; beams up to 15 in., 1·30@1·50c.; channels, 1·40@1·50c. on dock; tees, 1·45@1·60c. on dock.

**Old Material.**—Several sales of old rails are noted and also one for 250 tons axles for export to Italy. Nominal quotations remain: Old steel rails, $9.50@$10; old iron tees, $10@$11 per ton; New York railroad scrap, $11.50@$12 per ton, delivered at mill, and yard scrap at $10; wrought turnings, delivered at mill, $8@$8.50; No. 1 wrought scrap at $9.50@$10.50 from yard, and machinery cast scrap $9@$10; old wrought tubes and pipe, $6.50@$7; old car wheel, $9.50@$10.50, New York; cast borings, $6@$6.50, delivered at mill.

**Merchant Steel.**—But little business is noted Quotations are: Tool steel, 5·65@6·25c.; tire steel, 1·30@1·35c.; toe calk, 1·60@1·70c.; Bessemer machinery, 1·25@1·40c.; open-hearth machinery, 1·85@2c.; open-hearth carriage spring, 1·70@1·90c. crucible spring, 3·40@3·65c.; axles, scrap, 1·30@1·50c.; steel, 1·25@1·55c.; bars, common, 1·15@1·30c.; refined, 1·15@1·90c.; steel hoops, 1·45@1·60c. delivered; hooks and pins, 1·40@1·50c.; plates, flange, 1·50@1·65c.; firebox, 2@2·25c.; marine, 2·45@2·70c.; sheared, 1·80c.; shell, 1·40@1·50c.; tank, 1·20@1·40c.; universal mill, 1·25@1·40c. delivered.

### Buffalo. April 25.

(Special Report of Rogers, Brown & Co.)

Under an impression that an advance was about to take place in Southern iron the market was stimulated to an unwonted activity toward the close of last week. For the time being Southern iron claimed the undivided attention of buyers, and while other kinds were neglected, a large tonnage was placed with the leading brands of the South. The expected, as is now generally known, came to pass and prices are firm at the advance of 25c. per ton.

As the season of navigation opens more attention is being given to Lake Superior charcoal, but with few transactions. The growing use of coke pig iron, especially made to meet the requirements of the malleable trade, has made heavy inroads into the field heretofore occupied by the charcoal furnaces, who are endeavoring to hold their place by figures, which are closely competitive. Charcoal prices open somewhat lower than the average of last season, and while the supply is now liberal, an active buying movement would be promptly reflected in firmer views.

Our quotations given below are on the cash basis f. o. b. cars Buffalo: No. 1 foundry strong coke iron, Lake Superior ore, $11.25; No. 2 foundry strong coke iron, Lake Superior ore, $10.75; Ohio strong softener, No. 1, $11.35; Ohio strong softener, No. 2, $10.85; Jackson County silvery, No. 1, $15.50; Lake Superior charcoal, $13.75; Southern soft, No. 1, $11.25; Southern soft, No. 2, $11; Hanging Rock charcoal, $18.50.

### Chicago. April 24.

(From Our Special Correspondent.)

There is but little change in the Chicago iron and steel market. The buying of all classes of material is yet limited to small lots for quick delivery. A feature of the market is pig iron, which continues to improve slightly from week to week, the past week having been the best so far this year in point of sales and inquiry. Prices in various lines appear slightly firmer.

**Pig Iron.**—Probably 15,000 tons of pig iron was sold in this market the past week. This includes both Northern and Southern iron. The week surpassed any so far this year in aggregate sales, the demand being chiefly for carloads up to 300-ton lots. Sales over 300 tons were numerous, the highest one of the week being for 2,500 tons Northern iron. The largest sale of Southern iron made here in a long time was booked by a firm representing one of the large Southern furnaces. It was for 1,000 tons and was taken at a fair price. Both the Northern and Southern furnaces are very firm as to prices, the Northern in particular. The Northern furnaces are booked with orders for several months ahead, and can therefore afford to be independent. The Southern material is profiting by the raise in the Northern, and sales of it the past week aggregated more than for any week in a long time.

Prices are per gross ton f. o. b. Chicago: Lake Superior charcoal, $13@$13.50; Lake Superior coke No. 1, $10.50@$10.75; No. 2, $10.25@$10.50; No. 3, $9.75@$10; Local Scotch No. 1, $10.75; No. 2, $10.25; Jackson County silveries, $14.50@$15; Southern coke, foundry, No. 1, $11@$11.25; No. 2, $10@$10.50; No. 3, $9.75@$10; Southern coke, soft, No. 1, $10@$10.50; No. 2, $9.75@$10; Southern car-wheel iron, $17.50@$18; Southern silveries No. 1, $11.25@$11.75; No. 2, $11.25; Tennessee charcoal No. 1, $13@$13.50; Bessemer, $11@$11.25; Ohio strong softeners, $13.

**Structural Material.**—Material for building purposes is in fair demand, contracts having been let here for a large building in Buffalo and one in Chicago. There is some demand for bridge shapes. Quotations are f. o. b. Chicago, mill lots: Angles, 1·30@1·35c.; tees, 1·50@1·60c.; universal plates, 1·35c.; beams and channels, 1·40c.

**Plates.**—The situation in plates has not changed and sales continue limited, being then but in small quantities. Prices are: Flange steel, 1·60@1·75c.; fire-box steel, 1·95@4·50c.; tank steel, 1·35@1·40c.; boiler tubes, 70 to 75% discount.

**Merchant Steel.**—Inquiry has been good the past few weeks but it appears hard to close much business. Prices are no firmer. Prices are: Carload lots, machinery, 1·60@1·70c.; tire steel, 1·50@1·60c.; Bessemer bars, 1·25@1·35c.; toe calks, 2·00@2·10c.; crucible spring, 3·40@3·65c.; tool steel, 5½@6½c.; specials, 10·50@11·50c.

**Galvanized and Black Sheets.**—Business in both galvanized and black sheets remains below the average and prices in both are weak. Galvanized sheets are quoted 70, 10 and 10% off.

**Bar Iron.**—There is somewhat of an increased business in bars and prices, through the influence of the Cleveland meeting, are a degree firmer, common iron bing 1·05c.

**Steel Rails.**—Another week of very poor business has passed, a few sales of small quantities only having been booked; $23 is the quotation.

**Billets.**—There is no improvement in billets, there having been no sales of any consequence made during the week. Prices are $16.50.

**Old Rails and Wheels.**—No sales of old iron rails or wheels were made in this market during the week; $10.75 is the quotation for old iron rails and $8.75 for old wheels.

### Philadelphia. April 26.

(From Our Special Correspondent.)

**Pig Iron.**—Some brokers are claiming to-day that the market is stronger because offers made and accepted two weeks ago for both forge and foundry iron were not accepted this week. The reasons given for refusing is that the prices then named were exceptional, and that the larger inquiry this week and low stocks in many yards, warrants holders in insisting on prices a little closer to the published prices. The situation is much the same, to all appearances, but one hears on all sides talk of firmer prices and more business coming. No Bessemer is selling at the asking price $12.75. Fair sales of No. 1 are made at $12.25 and No. 2, at $11.25; Forge $10@$10.50.

**Steel Billets.**—The attempt to establish higher prices seems to have been made at an unfortunate time for two reasons. Consumers are moderately supplied and new business has suddenly fallen off. Asking price, $17.75.

**Merchant Iron.**—The dullness spoken of is felt at bar mills. It was hoped car-building orders would tide over, but very little business can be traced to that quarter. Common now goes at 1 to 1·10. Store sales are fair.

**Nails.**—Prices are maintained everybody says, but buyers are loathe to believe any permanency is possible.

**Skelp.**—More business is coming, but in small orders. This is not discouraging, as the orders come from concerns that will want a great deal as the season progresses.

**Sheets.**—A fair retail business is being done at all eastern sheet mills and at local stores.

**Merchant Steel.**—Consumers have not been heard from lately, many having purchased supplies to see them up to June.

**Plates.**—No large orders can be heard of, but plenty talk of coming big orders. Tank steel and heavy plates 1·25.

**Structural Material.**—A good deal of small work is coming in and those who know say, prices named on it are very low. There is even a contest between western and eastern mills it is said on these small jobs. Angles 1·25; Beams, ties and channels, 1·30.

**Steel Rails.**—The only actively spoken of is in girders.

**Old Rails.**—Brokers expect to work off a few small lots at a little under $12 delivered.

### Pittsburg. April 25.

(From Our Special Correspondent.)

**The Iron and Steel Trade.**—Business continues to show up fairly, for certain articles of production there is a better demand than for others. We are now at the close of the first month of the second quarter, the time for an active business has arrived. The iron trade in this vicinity, as in other portions of the country, is looking anxiously forward to an era of prosperity that is exceedingly gratifying not only to the members of the trade, but to others who look upon the iron business as a barometer to the general situation. The stiffening in the prices of iron, the increased output and consumption, and the constantly increasing inquiries are all hopeful signs that point to the return of confidence and indicate an inclination to put idle capital in active circulation again. While conditions are extremely encouraging in the iron trade and the manufacturers entertain a most hopeful view of the future, few are willing to predict a boom, but rather they expect a gradual and certain increase in consumption.

Standard brands of pig iron have held steady; some furnace agents are talking of higher prices, but consumers count upon Southern competition to prevent any rapid advance in prices and will only buy in small quantities. Moreover there seems to be enough iron at the old figures to go around.

Business in the Shenango and Mahoning Valleys continues very active; the Ohio Steel Company is increasing its output each week for billets, and with the competition of an additional large battery of boilers, the plant will commence the filling of orders for steel rails which has been accumulating. The Lloyd Booth Company have received a number of mill contracts and orders for chilled rolls that is keeping the plant busy in all departments with several large orders ahead for heavy machinery. Brown, Bonnell Iron Company pay roll for two weeks amounted to $35.000.

**Wrought Iron and Steel Pipe.**—The demand is improving; all the plants in this city and vicinity are running to their full capacity. The big boom in oil is credited with increased demand for pipe; several plants that a short time ago had a large amount of pipe on hand have disposed of the entire lot, and are running to their full capacity.

| Tons. | COKE SMELTED LAKE AND NATIVE ORE. | Cash. |
|---|---|---|
| 4,000 | Bessemer. April, May, June | $10.70 |
| 3,000 | Bessemer, April, May, June | 10.75 |
| 2,500 | Bessemer. April, May, June | 10.65 |
| 2,000 | Bessemer, April, May. June | 10 75 |
| 1,500 | Gray Forge, May June | 9.40 |
| 1,000 | Bessemer, May, June | 10.70 |
| 1,000 | Bessemer, May, June | 10.65 |
| 1,000 | Gray Forge, May | 9.35 |
| 1,000 | Bessemer, Valley Furnace | 10.15 |
| 1,000 | Bessemer, Valley Furnace | 10.10 |
| 1,000 | Bessemer, April, May | 10.65 |
| 1,000 | Bessemer, May, June | 10 70 |
| 500 | Bessemer | 10.70 |
| 500 | Bessemer | 10.75 |
| 500 | Gray Forge | 9.40 |
| 100 | April Mill | 9.40 |
| 100 | No. 1 Foundry | 11.00 |
| 100 | No. 1 Foundry | 10.25 |
| | CHARCOAL. | |
| 200 | No. 2 Foundry | 15 75 |
| 200 | Cold Blast | 22.75 |
| 200 | Cold Blast | 22.80 |
| 100 | Cold Blast | 22.50 |
| 100 | No. 2 Foundry | 15.75 |
| 50 | No. 3 Foundry | 15.50 |
| 25 | No. 2 Foundry | 15.65 |
| | BLOOMS, BILLETS AND SLABS. | |
| 2,000 | Billets, May and June at mill | $15.75 |
| 1,000 | Billets, May and June at mill | 15.70 |
| 500 | Billets, prompt | 15.75 |
| 500 | Billets, May | 15.65 |

| | SKELP IRON. | |
|---|---|---|
| 1,000 | Wide gr'v'd | $1.15 4 m. |
| 800 | Nar'w gr'v'd | 1.20 4 m. |
| 500 | Sheared | 1.30 4 m. |
| 375 | Wide gr'v'd | 1.20 4 m. |
| | SKELP STEEL. | |
| 700 | Nar'w gr'vd | $1.10 4 m. |
| 500 | Wide gr'vd | 1.10 4 m. |
| 380 | Sheared | 1.20 4 m. |
| | MUCK BAR. | |
| 500 | Neutral, deliv'ed, May | $18.40 |
| | BLOOMS, BILLETS, AND BAR ENDS. | |
| 1,000 | Bloom and billet ends | $11.15 |
| | FERRO-MANGANESE. | |
| 75 | 80% delivered | $47.00 |
| | SPELTER. | |
| 50 | Prime Western | $3.33 |
| | SHEET BARS. | |
| 1,000 | at maker's mill | $21 00 |
| 300 | at maker's mill | 20.50 |
| | STEEL WIRE RODS. | |
| 1,000 | 5-gauge, American at mill | $21.40 |
| | OLD RAILS. | |
| 550 | Steel rails | $9 80 |
| 500 | Iron rails | 12.50 |
| 300 | Iron rails | 12.80 |
| 250 | Steel rails | 10.00 |
| | SCRAP MATERIAL. | |
| 500 | Heavy steel scrap, gross | $9.75 |
| 500 | Nut punchings, net | 8.50 |
| 300 | Light steel scrap, net | 7.50 |
| 300 | No. 1 R. R. W. scrap, net | 10.15 |
| 200 | Wrought turnings, gross | 7.50 |

## METAL MARKET.

NEW YORK, Friday Evening, April 26, 1895.

### Gold and Silver.

**Prices of Silver per Ounce Troy.**

| April. | St. Ex. | London Pence. | N. Y. Cts. | Value of sil. in $1. | April. | St. Ex. | London Pence. | N. Y. Cts. | Value of sil. in $1. |
|---|---|---|---|---|---|---|---|---|---|
| 20 | 4.89½ | 30¼ | 66¼ | .512 | 24 | 4.89½ | 30⅛ | 66¾ | .516 |
| 22 | 4.89⅛ | 30⅛ | 66⅜ | .517 | 25 | 4.89¼ | 30⅛ | 67 | .518 |
| 23 | 4.89⅛ | 30¼ | 66⅜ | .517 | 26 | 4.89¼ | 30⅜ | 67⅛ | .519 |

Silver has been in very fair request at current prices, and under impulse of special orders has advanced to about as high figures as have prevailed at any time this spring. The mining and smelting interests have been much encouraged by the better tone of the market.

The United States Assay Office at New York reports the total receipts of silver at 98,000 oz. for the week.

### Gold and Silver Exports and Imports.

At all United States Ports, March, 1895, and Years 1895 and 1894 in coin and bullion:

| | Gold. | | Silver. | | Total excess, Exp. or Imp. |
|---|---|---|---|---|---|
| | Exports. | Imports. | Exports. | Imports. | |
| Mar.. | $3.135 219 | $7.258,621 | $3,790,074 | $547,985 | I. $881.313 |
| 1895.. | 30.630,241 | 14,122.157 | 10,618.276 | 1,606.156 | E. 26,520,204 |
| 1894.. | 8,509,387 | 3,938,071 | 12,466,681 | 2,426,791 | E. 14,611,256 |

Imports and exports of gold and silver in ores for the three months to March 31st are reported as below:

| | Gold | | Silver | |
|---|---|---|---|---|
| | 1894. | 1895. | 1894. | 1895. |
| Imports | $140,724 | $138,237 | $1,641 375 | $2,216,262 |
| Exports | 7,438 | ..... | 79,365 | ..... |
| Excess, Imports | $133,285 | $138,237 | $1,562,010 | $2,216,262 |

These imports and exports in ores are not included in the table of exports and imports of coin and bullion given above.

The statement includes all United States ports, the figures being furnished by the Bureau of Statistics of the Treasury Department.

**Gold and Silver Exports and Imports, New York**

For the two Weeks ending April 26th, 1895, and for Years from January 1st, 1895, 1894, 1893 and 1892:

| | Gold. | | Silver. | | Total Excess. Exp. or Imp. |
|---|---|---|---|---|---|
| | Exports. | Imports. | Exports. | Imports. | |
| We'k | $1,420,297 | $1,664,502 | $1,232,208 | $76,966 | E. $1,311,037 |
| 1895.. | 31,262,609 | 15,137,342 | 10,125,083 | 459,200 | E. 25,791,150 |
| 1894.. | 15,794,978 | 4,925,922 | 13,487,949 | 505,630 | E. 23,851,375 |
| 1893 | 51,142,422 | 5,589,811 | 10,232,890 | 931,582 | E. 54,913,919 |
| 1892.. | 20,159,403 | 5,917,619 | 8,379,773 | 460,887 | E. 22,160,670 |

The gold exported for the week was chiefly in French and Spanish coin, and went to the West Indies; the silver went chiefly to London. The gold imported was nearly all from France and England; the silver from Mexico and Central America.

FINANCIAL NOTES OF THE WEEK.

The steady growth of business and the upward tendency of prices continue to show that confidence in the future which is the most encouraging feature in the situation at the present time. The influence of this feeling is manifested in all quarters; beside the greater volume of transactions, both in retail and wholesale trade, the reopening and extension of factories which have been wholly or partly idle, the better demand for labor, and the increases in railroad traffic which are shown by the reports, there is a renewal of the buying of securities and a revival of speculation in different directions. Money continues to move in increasing amounts from the financial centers, and the banks weekly show smaller reserves and increased loans. The situation is well shown by the fact that the rates for time loans and discounts are higher than they have been for some time past, while such loans are more readily taken, and a disposition to aid new enterprises is beginning to be shown. The progress made from week to week is necessarily small; it is nevertheless plain enough to show the general tendency.

An indication of the general drift is the fact that we hear but little of labor troubles. With the exception of the bituminous coal mining, in which there seems to be a chronic state of war between operators and miners, there are few trade disagreements now in progress, and those are of minor importance. In some branches of manufacturing, indeed, we hear of the restoration of wages to the pre panic standard, and these will doubtless be followed by others.

The discussion of the currency question continues to increase, and there is probably a more general interest in the subject than ever before. The silver nonometallists and the cheap money advocates continue exceedingly active, and this fact is rousing their opponents to greater efforts than they have heretofore made; but there is still room for improvement in this respect. It is fortunate that the growth of prosperity is putting the country in a better position to deal with this all-important question, while the general discussion is bringing forward men who are better able to deal with it than those who have so mis-shaped our policy in the past.

The growth of confidence is shown by the fact that there have been no withdrawals of gold from the Treasury in exchange for notes; but on the contrary several instances are noted where gold in considerable lots—$50,000 and over—has been offered in exchange for notes. These offers have been chiefly made on account of the existing demand for small bills.

The syndicate still continues in entire control of the Exchange market, and while rates continued high there has been no talk of gold imports. In fact the tendency is beginning to be in another direction; both from London and Berlin some heavy buying of American securities is reported, and it appears quite possible that a movement will set in for the repurchase of the securities which were sold back at different times during the past year. Most of these can be bought now at reasonable prices, and if the upward movement continues there would be no advantage in postponing buying by anyone who really wants to get the securities. Foreigners are evidently taking this into consideration, and although there is some hesitancy on account of past trouble over the currency question, there seems to be a greater confidence and a growing belief that sound money will win in the end.

Two recent sales of municipal bonds show the tendency of investment. A loan of $1,100,000 in 4% gold bonds having 30 years to run and issued by the city of Providence, R. I., were awarded at the rate of 113·95. Another loan of $975,000 in 20-year gold bonds issued by the city of St. Louis were awarded to a New York house at a price equivalent to 107 for 4% bonds. In both cases the issues were largely overbid.

There continues to be much talk in European circles of a concerted movement to enforce the revision of the treaty between China and Japan by a demonstration of European influence. Russia, France and Germany, it is said, are negotiating with England for joint action. It does not appear probable, however, that force will be used. The proposed revision will probably amount to an attempt to overawe Japan, but if that country takes a determined position it is not probable that force will be resorted to. In any case the indemnity clause is not likely to be touched.

The London "Statist" of April 13th, says: "The publication of what are represented to be the Japanese terms of peace has strengthened the belief that the war will now speedily come to an end, and therefore has revived the speculation in silver. The Indian exchanges have likewise gone up. So far as the condition of India is concerned, there is nothing to account for the demand for the drafts and for the high price. As a matter of fact, trade continues exceedingly dull, and money is in little demand. The whole explanation is to be found in the general belief that much silver will be taken to pay the war indemnity, and that the price, therefore, must go up. We may observe that if the statistics of production can be at all depended upon, there has as yet been little falling off in the outturn from the mines. If that be so, it is to be recollected that it is very nearly two years now since the India mints were closed; that it is more than a year since India has bought any considerable amount, and that it is fully a year and a half ago, indeed, not much short of two years since the United States Treasury stopped buying. Therefore, for nearly two years the American demand, amounting to 54,000,000 oz. per annum, has been absent, and for a year or more the Indian demand, amounting annually on the average to about £7,000,000 sterling worth, has also been absent. Of course, there may have been an extraordinary consumption in some directions, but if there had been we have been unable to find anyone who can explain where it is. We would ask then, what has become of the immense supplies of silver during the past two years? Is it not possible that a great accumulation has taken place at the mines, and that speculators have also laid in large stocks at low prices? If that be so, then it does not seem probable that the rise in silver can be carried very far. Of course, we well know what speculation can do when it takes the bit in its teeth. That it may, therefore, carry all before it for a while we at once admit. But that the price of silver can rule very much higher, say, during the next year or two, does not appear to us probable.

It is certain there is no such large accumulation at the mines in the United States as the "Statist" intimates.

Imports of specie by water at San Francisco for March were $161,360, against $130,210 for the corresponding month last year. For the three months ending March 31st the imports were $319,768 in silver and $150,167 in gold, a total of $469,965. This shows a decrease of $446,488 from the first quarter of 1894. The total imports this year were as follows: Mexico, $402,271; British Colombia, $37,835; Australia, $852; Central America, $25,000; Japan, $3,500; Society Islands, $507.

The statement of the United States Treasury on April 25th shows balances in excess of outstanding certificates as below, comparison being made with the corresponding day of last week:

| | April 18. | April 25. | | Changes. |
|---|---|---|---|---|
| Gold | $91,503,835 | $90,762,440 | I. | $258,575 |
| Silver | 20,232,135 | 21,065,359 | I. | 833,224 |
| Legal tenders | 48,215,119 | 44,402,760 | D. | 3,812,359 |
| Treasury notes, etc. | 26,334,567 | 26,783,788 | I. | 449,221 |
| Total | $185,285,656 | $183,614,317 | D. | $2,371,339 |

Government deposits with national banks on the same date amounted to $15,467,763, a decrease of $1,026,573 during the week.

Total United States Treasury notes issued under act of July 14th, 1890, in general circulation and in the Treasury, $149,776,280. Against these are held 25,619,426 coined standard silver dollars and silver bullion purchased at a cost of $124,187,305, making a total of $149,806,731.

The receipts of the United States Treasury for the week ending March 30th for three years past were as follows:

| | 1893. | 1894. | 1895. |
|---|---|---|---|
| Customs | $3,790,074 | $2,581,458 | $2,787,666 |
| Internal revenue | 2,761,400 | 2,537,486 | 2,500,059 |
| Miscellaneous | 517,432 | 735,331 | 566,877 |
| Total | $7,070,906 | $5,854,275 | $5,854,602 |

The receipts for the week this year show an increase of $483,802 over those of the preceding week.

A dispatch from Washington on April 24th reported that changes are contemplated in the Philadelphia Mint and that a new superintendent will be appointed; later dispatches, however, have not yet confirmed the statement.

The Director of the Mint has ordered the removal to the San Francisco Mint of the gold and silver bullion now at Carson City; some unrefined silver, also at Carson City, will follow. This will practically complete the dismantling of the latter mint, which has been used recently only as an assay office. It may be well to recall the advice of the "Engineering and Mining Journal," when the representative of the Comstock mill ring was appointed superintendent of the Carson Mint, that the Government would do well to close the Carson Mint, for it would surely bring out some scandal, and this expected result has come.

The statement of the New York banks—including the 66 banks represented in the Clearing House—for the week ending April 20th, gives the following totals, comparisons being made with the corresponding weeks in 1894 and 1893:

| | 1893. | 1894. | 1895. |
|---|---|---|---|
| Loans and discounts | $428,998,900 | $459,059,400 | $480,721,400 |
| Deposits | 440,794,400 | 569,539,100 | 510,188,300 |
| Circulation | 5,539,200 | 10,673,300 | 13,217,000 |
| Specie | 72,254,100 | 98,920,700 | 65,637,800 |
| Legal tenders | 52,727,700 | 125,472,100 | 80,573,500 |
| Total reserve | $124,981,850 | $224,394,800 | $147,211,300 |
| Legal requirement | 110,198,600 | 142,384,775 | 127,797,075 |
| Surplus reserve | $14,783,200 | $82,010,025 | $19,414,225 |

Changes for the week were increases of $4,742,200 in surplus reserve, $1,250,800 in specie, $5,080,100 in legal tenders, $6,354,800 in deposits, and $75,700 in circulation; a decrease of $301,700 in loans. There is again a slight tendency to accumulate money, and, without showing any marked changes, the whole showing is less favorable than had been hoped for.

The Bank of England on Thursday, April 25th, reported its total gold holdings at £37,492,222, an increase of £5,654,015 over the corresponding date last year. The net increase in bullion for the week was £737,189, due partly to large imports and partly to the natural return to the Bank of the money drawn out prior to the Easter holidays. The imports for the week were chiefly from Australia, Egypt and China. The Bank's transactions show a somewhat larger volume and the proportion of reserve to liability was 67·55% against 68·10% last week, and 67·75% a week ago.

The Bank of France on Thursday, April 25th, reported its total specie holdings at 2,066,016,000 fr. gold, and 1,232,639,500 fr. silver, an increase of 322,654,891 fr. gold, and a decrease of 39,861,577 fr. silver as compared with the corresponding date last year. Changes for the week were decreases of 3,025,000 fr. gold and of 225,000 fr. silver. The Bank again shows a loss of gold, though in somewhat smaller amount than for several weeks past.

For convenience of comparison, we have grouped together in the table below the specie holdings of the leading banks of the world at the latest dates covered by their reports. The amounts are reduced to dollars, and comparison is made with the holdings at the corresponding dates last year:

| | Gold. | Silver. | Total. |
|---|---|---|---|
| Asso. Banks of New York | ..... | ..... | $66,637,800 |
| 1894 | ..... | ..... | 98,920,700 |
| Bank of England | $187,461,110 | ..... | 187,461,110 |
| 1894 | 159,191,035 | ..... | 159,191,035 |
| Bank of France | 413,203,200 | $246,527,900 | 659,731,100 |
| 1894 | 348,672,222 | 254,500,215 | 603,172,427 |
| Imp. Bank of Germany | ..... | ..... | 279,100,000 |
| 1894 | ..... | ..... | 220,850,000 |
| Austro-Hungarian Bank | 89,427,000 | 68,150,000 | 157,546,000 |
| 1894 | 51,741,000 | 81,799,000 | 133,577,000 |
| Netherlands Bank | 21,399,000 | 35,259,000 | 56,649,000 |
| 1894 | 21,693,000 | 35,298,000 | 56,991,000 |
| Belgian National Bank | ..... | ..... | 25,913,000 |
| 1894 | ..... | ..... | 22,889,000 |
| Bank of Spain | 40,021,000 | 62,027,000 | 102,048,000 |
| 1894 | 39,590,000 | 41,613,000 | 81,203,000 |
| Bank of Italy | 59,875,000 | 11,200,000 | 71,075,000 |
| 1894 | ..... | ..... | ..... |
| Imp. Bank of Russia | 274,075,000 | 53,530,000 | 327,605,000 |
| 1894 | ..... | ..... | ..... |

The return for the Associated Banks of New York is of date April 20th; all the others are of date April 25th, except the Bank of Italy, whose return is dated March 10th, and the Bank of Russia, March 1st-13th. The New York banks do not report silver separately, but the specie carried is chiefly gold coin. The Bank of England reports its gold only, not considering silver at all. The Imperial Bank of Germany and the Belgian National Bank do not report gold and silver separately.

Shipments of silver from London to the East for the year to April 5th are reported by Messrs. Pixley & Abell's circular as below:

| | 1894. | 1895. | Changes. |
|---|---|---|---|
| India | £1,995,685 | £1,233,630 | D. £762,055 |
| China | 851,896 | 947,393 | I. 125,497 |
| The Straits | 217,500 | 217,105 | D. 395 |
| Japan | 90,800 | 105,000 | I. 14,200 |
| Total | £3,125,881 | £2,503,128 | D. £622,753 |

Exports reported for the week were £51,000 in bar silver to Hong Kong and £27,100 in Mexican dollars to Penang. The receipts for the week were £4,000 from South Africa; £26,000 from Chile and £46,000 from New York; a total of £76,000, all bar silver.

Indian Exchange was steadier this week than had been expected, and the usual 60 lakhs of Council

bills were sold in London with no material change in price from last week. There is beginning to be, it is said, some demand for gold in India, and from Bombay resales are reported of a considerable amount which had been bought for export.

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The Bombay correspondent of the London "Statist" says: The Indian trade returns for February, which complete the first ten months of the Indian financial year, are quite favorable from an exchange point of view. Special attention, however, deserves to be drawn to the unique position in which India finds herself in regard to the foreign trade in the precious metals. The returns for the 10 months show that the exports of gold and silver together now very nearly equal the imports in value. This position has been obtained, too, in the face of many of the native mints being still open for free coinage. There can be little doubt that had the native mints been closed along with the Imperial mints the net export of the precious metals would have been considerable. And, even with the native mints open, it would not be surprising to find the balance actually in favor of exports before very long. At the moment, however, gold is not being exported so freely as before, although nearly every mail steamer takes a few lakhs of rupees' worth. Dealers now frequently buy back from the banks gold which they had sold to them previously. But, remembering the enormous hoards of gold in India, it is much too early to say that the export movement has anything like exhausted itself. Unless exchange rises considerably the monsoon season may see a revival. On the other hand, the demand for English sovereigns is more active. These are used for marriage presents among the natives, for hoarding, and also for melting up into ornaments, the natives thereby having a guarantee of the purity of the gold. In silver imports at present there is no fresh business doing, as prices in India have not altogether followed the rise in London. In fact, not only does it not pay to import silver, but banks here have been rebuying the metal —it is thought in connection with the coinage of the new British dollar. No announcement, however, has as yet been made regarding the terms on which silver will be received at the Mint for that purpose.

Imports and exports of the precious metals in Great Britain for the three months ending March 31st are given by the Board of Trade returns as be low:

| | Gold | | Silver | |
|---|---|---|---|---|
| | 1894. | 1895. | 1894. | 1895. |
| Imports | £4,929,287 | £8,269,644 | £3,393,247 | £2,280,050 |
| Exports | 2,003,692 | 6,290,128 | 3,508,647 | 2,685,581 |
| Excess | £2,935,595 I. | £1,979,516 E. | £115,400 E. | £405,531 |

The large increase in the gold movement this year is to be noted. While the imports increased £3,330,357, the exports showed a gain of £4,286,436, so that there was an actual decrease of £956,079 in the net gain of gold this year.

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There has been some talk of placing a Chinese loan in Germany, but nothing definite has been made public about it. It will be remembered that soon after the war began there were reports of a large loan to be negotiated by German bankers, but the end was the issue of the loan or of part of it, in London, the German terms not being acceptable. Latest dispatches are that arrangements have been made in London for a loan of $5,000,000. In the present congested condition of the money market there this loan may go through, but it is not likely that a policy of borrowing by driblets will aid the already damaged credit of China, and a larger loan would have a much better chance of success.

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The report of Bon Juan Torrico Y Mesa, director of the National Mint of Peru for the year 1894, shows that the coinage of the Mint for that year was the largest ever made. The total value of the coinage of Peru was 4,360,153 soles, of which 4,357,858 was in silver soles, and 2,394 soles were in dineros. In addition to this coinage for its own government the Mint turned out coins to the value of 114,583 soles for the government of Ecuador. The latter was all in small coins, no sucres having been struck. The value of this Ecuadorian coinage was as follows: In quintos (20 cent pieces), 81,824 soles; in decimos (10 cents), 20,628 soles; in vigesimos (5 cents), 12,131 soles. This brought the total value of the coinage actually up to 4,474,730 soles, or more than twice that of 1893. The quantity of silver imported for purposes of coinage was 2,017 bars, having a gross weight of 107,468 kilos., and containing 100,604 kilos. of fine silver, having a value of 4,471,276 soles. Exports of silver reported by the mint were five bars, having a gross weight of 101 kilos. and containing 90,636 kilos. of fine silver. These imports show a very large decrease from the preceding year. The decrease is due doubtless to the fall in price of silver and the fact that the sole has a greater value in circulation than its bullion cost, and it is consequently more profitable to coin the silver than to export it as bullion. The imports of gold for the year included 102 bars registered and stamped by the Mint, and having a gross weight of 151 kilos. These bars contain 111·65 kilos. of fine gold, and were valued at 76,916 soles.

### Domestic and Foreign Coins.

The following are the latest market quotations for the leading foreign coins:

| | Bid. | Asked. |
|---|---|---|
| Mexican dollars | $0.53½ | $0.54 |
| Peruvian soles and Chilean pesos | .52 | .53½ |
| Victoria sovereigns | 4.87 | 4.90 |
| Twenty francs | 3.88 | 3.92 |
| Twenty marks | 4.78 | 4.82 |
| Spanish 25 peseta | 4.85 | 4.89 |

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### Other Metals.

**Copper.**--Business in all branches is very good, and a further advance has set in, so that 9¾c. has been refused by some of the leading Lake companies, and large orders which have come into the market for export could not be executed, either because prices offered were too low, or because the copper was not in existance. Electrolytic copper is exceedingly scarce, and for near delivery hardly to be had. In the beginning of the week sales were made at 9 50, but afterward 9⅝ was paid. Casting copper is now also somewhat higher, and we have to quote 9⅛@9¼c. No business is reported in Arizona pig copper. The exports remain heavy and are likely to continue so for some time to come.

In Europe the market has had a strong tendency and a large business has been doing, but prices are slow to improve, especially for the commoner grades of copper. G. M. B.'s close at £40 10s.@£40 12s. 6d. for spot, and £40 17s. 16d.@£41 5s. for three months prompt. A good demand exists abroad for fine copper, of which a scarcity is noticed. Refined and manufactured we quote as follows: English tough, £43 @ £43 10s.; best selected, £43 10s.@£44; strong sheets, £50@£51; India sheets, £48@£48 10s.; yellow metal, 4¼d.

**Copper Exports.**—The exports of copper from the port of New York during the week ending April 26th, 1895, as reported by the New York Metal Exchange, were as follows:

| | | |
|---|---|---|
| Copper: | | |
| Rotterdam—Spaarndam | Ingots | 50 tons |
| " " | Plates | 25 " |
| " " | Bars | 50 " |
| " Veendam | Plates | 50 " |
| Glasgow—Siberian | Bars | 20 " |
| Italy—San Giorgio | Ingots | 10 " |
| Bordeaux—Chateau Lafitte | Pigs | 180 " |
| " " " | Bars | 150 " |
| Rotterdam—Amsterdam | Plates | 75 " |
| Swansea—Wells City | Pigs | 150 " |
| Havre—La Gascogne | Bars | 125 " |
| " " | Ingots | 75 " |
| Rotterdam—Veendam | Plates | 12 " |
| " " | Ingots | 34 " |
| Matte: | | |
| Swansea—Boston City | | 90 tons |
| " Wells City | | 78 " |

Exports of copper from Baltimore for the week ending April 26th are reported by our special correspondent as follows:

| | | |
|---|---|---|
| Hamburg—California | 963 cakes | 452,327 lbs. |
| " " | 1,399 bars | 246,871 " |
| Rotterdam—Patapsco | 3,325 plates | 67,200 " |
| Liverpool—Sedgemore | 1,012 bars | 112,024 " |

This is a total of 1,006 long tons of copper and 168 tons of matte from New York, and 392 tons of copper from Baltimore; making in all 1,398 tons of copper and 168 tons of matte.

We have also to note for the week imports of 26 tons of copper from London and 50 tons from Swansea; a total of 76 tons, all in ingots.

**Imports and Exports of Metals.**—Imports of metals into this port for the week ending April 18th are reported by the New York Metal Exchange as follows: 170 tons tin from London; 150 tons Straits tin from Bremen; 10 tons English tin from Liverpool; 10 tons Banca tin from Holland; 500 tons Belgian lead, duty paid, from Antwerp; 19,161 boxes tin plates from the United Kingdom; 1,390 tons iron pyrites from Spain.

Exports of metals (other than copper) from this port for the week ending April 18th are reported by the New York Metal Exchange as follows: 80 tons sulphate of copper to Genoa; 30 tons sulphate of copper to Leghorn; 10 tons sulphate of copper to Ancona; 102 tons sulphate of copper to Naples; 55 tons sulphate of copper to Genoa; 11 tons zinc skimmings to Liverpool; 14 tons old metal to Liverpool; 90 tons tin scrap to Rotterdam.

Arrivals at the port of Philadelphia for the week ending April 19th were: 6,600 tons iron ore from Cuba; 2,580 tons copper ore from Spain.

Arrivals at the port of Baltimore for the week ending April 19th were: 1,570 tons iron pyrites from Spain; 1,540 tons iron ore from Cuba; 150 tons pig iron from Glasgow; 11,483 boxes tin and black plates from the United Kingdom.

Exports of metals (other than copper) from Baltimore for the week ending April 26th are reported by our special correspondent as follows: 5,082 slabs, 254,568 lbs., spelter to London; 78 bbls., 45,375 lbs., sulphate of copper to Hamburg; 30 bbls., 15,750 lbs. sulphate of copper to Liverpool.

Imports of metals at New York for the five days ending April 24th, were 725 tons tin from London; 100 tons Straits tin from Holland; 14 tons Silesian spelter, duty paid, from Stettin; 150 casks antimony from Newcastle.

**Tin.**—The market, on the whole, has been dull, and only a small business has been doing, as consumers still refuse to pay the prices asked. Importations have been heavy, and with the smaller deliveries stocks have correspondingly increased. We quote spot and May, 14c., and June and September, 13¾.

The London market has also been uninteresting, and quotations hardly show any change, spot tin closing at £63 15s@£63 17s. 6d., and three months prompt at 10s. higher.

Shipments of tin from the Straits for the first half of April were 2,240 tons, against 1,275 tons for the corresponding period last year. Of the shipment, this year 1,800 tons were for the United Kingdom, 530 tons for other European ports, and 110 tons for the United States direct. The cable reports that the public sale at Batavia, Java, April 24th, realized an average price of 38,625 guilders per pikul, which is equivalent to about £64 10s., c. i. f. to Holland ports. This shows a sharp increase in price over the February sale, at which an average of 35.75 guilders was realized.

**Lead** continues very dull. The demand is not bad and there is a continued pressure to sell from the West. We have still to quote 3·07½. The foreign market is a trifle easier, Spanish lead being quoted £9 18s. 9d.@£10, and English lead 2s. 6d. more.

*St. Louis Lead Market.*—The John Wahl Commission Company telegraphs us as follows: Lead is quiet and prices are unchanged at 2·87½c. The trading is still very light, and buyers seem to have little faith in future values, still preferring to buy on the hand-to-mouth plan.

**Spelter** is rather irregular, but if anything, a trifle easier. We quote: $3.25 @ $3.30.

In London the quotations for good ordinaries are £14 and specials £14 5s.

**Antimony** is dull and only a retail business doing, without any change in quotations; Cookson's, 8c.; Hallett's, 7c.

**Aluminum.**—The standing quotations, according to producer's price list, are given below, the three prices named being respectively for small lots, for orders of 100 lbs. or over, and for orders of one ton or over: No. 1 metal, over 98% pure, in ingots ready for rolling, etc., 60c., 58c. and 55c. per lb. No. 1 metal, in ingots for remelting, 55c., 52c. and 50c. per lb. No. 2 metal, over 94%, but less than 98%, in ingots for remelting, 53c., 50c. and 48c. per lb. Rolled sheets, No. 1 metal, 80c.@$4.40 per lb., according to size and thickness. Wire, $1@$2.50 per lb., according to gauge. Tubes, from 14c.@$3.15 per linear foot, according to thickness and diameter. Castings, from 90c. per lb. up, according to pattern and size of order.

Abroad the price is fixed by the Neuhausen Company, which quotes 5 fr. per kilo.—equivalent to 45c. per lb.—at works in Switzerland for small orders; a discount is made on large sales. Quotations in Paris, for large orders, are 5 fr. per kilo. for ingots; 6 fr. per kilo. and upwards for sheets; 10 fr. per kilo. for wire, 0·5 mm. and over; 15 fr. per kilo. and upwards for sheets.

**Bismuth.**—Quotations are nominally $2@$2.50 per lb., according to size of order, with no recent sales reported.

**Magnesium.** — No sales are reported, and no New York quotations can be given. Current German prices are 27 marks per kilo.—equivalent to $2.94 per lb.—for ingots; 26 marks per kilo. for bars; 36 marks per kilo. for powder, and 38 marks for ribbon and wire. For orders of less than 10 kilos., 1 mark per kilo. must be added for ingots or bars, and 2 marks for wire, etc. These prices are at works.

**Nickel.**—Current quotations are 36@39c. per lb.; there is some inquiry for future deliveries.

In London, quotations are 14@16d. per lb., and a lower tendency is reported. In Paris the price is quoted at 4@4·50 fr. per kilo.—equivalent to 35 @39c. per lb.—for pure metal; 2@2·25 fr. per kilo. for copper-nickel alloy, 50% nickel.

**Phosphorus.**—For commercial phosphorus, quotations continue steady at 50@52½c. per lb., f.o.b., New York or Philadelphia.

**Platinum.**—Quotations are steady abroad at a point equivalent to $9.75@$10.50 per ounce. The market is firm.

For chemical ware, best hammered metal, Messrs. Eimer & Amend, New York, furnish the following quotations, the prices given being respectively for orders of over 250 grams; for orders of over 100 grams and less than 250 grams, and for orders of less than 100 grams: Crucibles and dishes 41c., 43c. and 45c. per gram. Wire and foil are 40c., 41c. and 42c. per gram. The current retail price for crucibles is 50c. per gram.

**Quicksilver.**—Another rise in prices has taken place, and the New York quotation is now $38.50 per flask, an increase of $1.50. London prices are £7 per flask, with £6 17s. 6d. quoted from second hands.

**Sodium.**—No sales are reported here. In England and Germany makers' prices are equivalent to 90@ 96c. per lb., according to quantity.

## CHEMICALS AND MINERALS.

NEW YORK, Friday Evening, April 26.

**Heavy Chemicals.**—Dealers report a better feeling in this market, which is regarded as the precursor of an improvement in business. Caustic soda is in better demand, and there are signs of an increased consumption, though buyers still affect to consider present values as too high. Alkali is also in better inquiry, and prices are firm. The same applies to carbonated soda ash. Bleaching powder is in good request at firmer prices. We quote this week: Caustic soda, 60%, 2·10@2·20c. for spot; other tests, futures, 1·95@2·10c. Carbonated soda ash, 48%, is 1·10@1·25c., according to quantity and delivery. Alkali, 48%, is ·90@1c., with special makes at 1@1·05c. Bicarb. is 1·80@2c. for spot. Bleaching powder is $1.85@$1.95. Sal soda, 65@70c.

**Acids.**—Manufacturers report a fair volume of business. Consumers continue to buy as they need supplies, as they believe that prices are likely to remain at their present level through the year. The freer movement of some acids would denote an increased consumption, though it is not yet great enough to come up to the productive capacity of the plants. It would require a vast increase in the demand to do this. We quote per 100 lbs. in New York and vicinity, in lots of 50 carboys or more: Acids, acetic, $1.40@$1.65 (in barrels). Muriatic, 18°, 75@85c.; 20°, 90c.@$1.15; nitric, 36°, $3.25@$4; 40°, $4@$4.50; 42°, $4.50@$5.25. Mixed acids according to mixture: oxalic, $7@$7.50. Sulphuric, 60°, 60@70c.; 66°, 70@85c. Blue vitriol is quoted at $3.50@$3.75.

Brimstone.—The market for Sicilian brimstone is dull and depressed. Very little is doing. Quotations for best unmixed seconds are as follows: On the spot, $16; future shipments, $15.25. Best thirds are 50c. less.

**Fertilizing Chemicals.**—The good demand from the Northern consumers noted in our last report continues unabated and prices, especially for the ammoniates, remain firm. From the South most of the business consists of deliveries on contracts, as the regular season is practically over. Our quotations are as follows this week: Sulphate of ammonia, gas liquor spot, $3; shipments, $2.95; bone, $2.90. Dried blood, high grade, $1.95@$2; low grade, $1.80 per unit. Azotine, $1.90. Concentrated phosphate (30% available phosphoric acid), 70@72½c. per unit. Acid phosphate, 13% to 15%, av. $P_2O_5$, 57½c. per unit at seller's works in bulk. Dissolved bone black, 17% to 18%, $P_2O_5$, 90c. per unit. Acidulated fish scrap, $12, and dried scrap with few or no sales, nominally $21 f. o. b. fish factory. Tankage, high grade, $19@$20; low grade, $18@$19. Bone tankage, $21; ground bone, $19@$20. Bone meal, $21 @$22.

In lots of 50 tons on contracts we quote, per 100 lbs.: Double manure salts, 48-53% (basis of 48%): New York, Boston and Montreal, $1.10; Philadelphia and Norfolk, $1.12½; Charleston, Savannah, Wilmington, N. C., and New Orleans, $1.15. Sulphate of potash, 90%, and minimum, 96% respectively (basis of 90%): New York, Boston and Montreal, $2.08@ $2.09; Philadelphia and Norfolk, $2.10½, Charleston, Savannah, Wilmington, N. C., and New Orleans $2.13.

Muriate of Potash.—Quotations for lots of 50 tons are as follows: 80-85% and minimum 95%, respectively (basis of 80%): New York, Boston and Montreal, $1.78; Philadelphia and Norfolk, $1.80½; Charleston, Savannah, Wilmington, N. C., and New Orleans, $1.83.

Kainit.—Prices for kainit (minimum 23%) are as follows for invoice and actual weights respectively, New York, Boston and Philadelphia, $8.80; Norfolk, $9.15; Charleston, Savannah, Wilmington, N. C.. and New Orleans, $9.55.

Nitrate of Soda.—We quote this week: on the spot, $1.60@$1.62½; near by arrivals, $1.65; futures, $1.70@ $1.72½.

Shipments of phosphate rock from Charleston, S. C., during the month of March, as reported by our special correspondent, were as follows: 1895, 698 tons of ground and 15,581 tons of crude; 1894, 14,679 tons of crude; 1893, 600 tons of ground and 15,193 tons of crude.

**Valparaiso, Chile.** March 2.

(Special Report of Jackson Bros.)

**Nitrate of Soda.**—The market still continues dull, very little business having been done during the fortnight. Reported sales amount to 353,500 quintals, with one resale of 19,000 quintals. For immediate nitrate prices paid have been 5s. 6d.@5s. 6½d. for 95%, and 5s. 9d. for 96%. For forward nitrates sellers prefer holding in hopes of securing better prices. We quote 95% March-April at 5s. 6d@5s. 7d., and 96% at 5s. 9d. The price of 5s. 6½d. with 21s. 3d. all-around freight stands in 7s. 3¾d. cwt., net cost and freight at European ports, without purchasing commission. Freight rates for nitrate are quoted 21s. 3d.@22s. 6d. to ports in United Kingdom. To the United States the lowest quotation is 21s. 3d. for Hampton Roads.

## PETROLEUM.

NEW YORK, Friday Evening, April 26, 1895.

The oil market has undergone a reaction since our last report. It is quieter, and there has been a decline in prices. In the Consolidated Stock and Petroleum Exchange there has not been a single transaction in pipe line certificates this week, and the trading in the Oil City exchange has also been very light. To-day's quotations at Oil City were: Opening, $2.05½; highest, $2.07; lowest, $2.05, and closing, $2.05½. During the week prices were as follows: Monday, $1.95@$2.11; Tuesday, $2.09½@$2.13; Wednesday, $2.05@$2.09; Thursday, $2.02½@$2.07.

## MINING STOCKS.

Complete quotations will be found on pages 406 and 407 of mining stocks listed and dealt in at:

| | | |
|---|---|---|
| New York. | Denver, Colo. | Salt Lake, Utah. |
| Boston. | Aspen, Colo. | London, England. |
| Baltimore. | Colorado Springs. | Paris, France. |
| Philadelphia. | Duluth, Minn. | Mexico. |
| San Francisco. | Helena, Mont. | Shanghai, China. |
| Santiago, Chile. | N. Y. Coal Stocks. | N. Y. Industrials. |

NEW YORK, Friday Evening, April 26.

The renewed activity in the mining stock market, which we noted in our last issue, continues. This week total sales amounted to 47,996 shares.

The Comstocks have been very quiet during the week, with the exception of Comstock Tunnel. Mr. Theodore Sutro, who has been president of the company for the past few years, resigned his position and disposed of the greater part of his stock to Mr. Franklin Leonard and others. Besides Mr. Sutro, Mr. Otto Loewengard, secretary and treasurer, Messrs. Julius A. Stursberg, Elisha Dyer, Jr., and Wheaton R. Kunhardt resigned as directors, and were succeeded by Messrs. Franklin Leonard, R. Hobart Smith, H. H. Truman, and Gordon Macdonald. Mr. Leonard subsequently was elected president and Mr. Macdonald treasurer of the company. In giving the reasons which led to his resignation Mr. Sutro said to a representative of the "Engineering and Mining Journal": Eight years ago, when I was called upon to reorganize the Sutro Tunnel Company and save its property for the stockholders, I was engaged simply as an attorney, and in this capacity attended to the legal work, forming the Comstock Tunnel Company. The greater portion of my fee was paid to me in the shape of a large block of the new company's securities. I thus became very largely interested in the company, and many of my friends among the stockholders urged me to accept the management of the new organization especially as we had on our hands the annoying suit of Aaron and his crowd, with which your readers are familiar. Later the companies refused to pay royalties to the Comstock Company and we had to bring suit against them. The attorneys we employed presented an exorbitant bill for their services and we had a little difficulty in settling their claims. All the legal complications of the company are now at an end, and I feel that I can take a step which I have long desired to take, to retire from the presidency and devote my entire attention to my legal practice. The prospects of the company are promising and the new management should have easy sailing. The most amicable relations exist between the new directors and myself, and I wish them all success in the conduct of an enterprise in which I have taken a more than merely professional interest.

Mr. Sutro also informed us that the claims of the Pacific Coast attorneys, which amounted originally to $32,000, were by them reduced to $23,000. The company has paid $10,000 in cash, and will pay the balance by giving to the attorneys one-third of the monthly income derived from the royalties paid by the mines until the balance is paid. The company has two years in which to pay the $13,000. Mr. Sutro says that the company's income amounts to from $2,000 to $3,000 monthly, and the expenses are less than $1,500.

At the Exchange there was quite a demand for both the stocks and bonds of the Comstock Tunnel Company. The stock advanced from 6@10c., with sales of 3,500 shares; of the bonds $4,500 at 10@13% were sold. There was also a sale of $200 of the scrip at 15c.

Of the other Comstocks, Consolidated California & Virginia shows sales of 3,020 shares at $3.10@$3.50; at the close $2.80 was bid. Other sales were: 200 shares of Chollar at 50c.; 500 shares of Consolidated Imperial at 7c.; 100 shares of Crown Point at 72c.; 200 shares of Union Consolidated at 60c., and 500 shares of Yellow Jacket at 50@55c.

Of the California stocks, Brunswick Consolidated continued to advance, and 8,900 shares were sold at 10@17c. Standard Consolidated shows a solitary sale of 100 shares at $3, the highest price which this stock has reached for a long time. Other sales of California stocks were 200 shares of Bodie Consolidated at $1.20; 1,500 shares of quicksilver, common, at $3.13@$4, and 1,026 shares of the preferred stock at $18 and $20.

Of the Colorado shares the most active were Leadville Consolidated, of which 4,700 shares changed hands at 17@18c., and Lacrosse of which 5,700 shares were sold at 8@10c. Other sales were: 1,500 shares of American Flag at 5@7c.; 300 shares of Argentum-Juniata at $1.15; 1,400 shares of Chrysolite at 15@19c.; 1,250 shares of iron silver at 25@ 30c.; 1,500 shares of Isabella at 21@23c.; 1,500 shares of Little Chief at 19@20c.; 1,500 shares of Mollie Gibson at $1.10@$1.15, and 1,200 shares of Robinson Consolidated at 12@15c., and 100 shares of Portland at 80c.

A block of 2,000 shares of Alice was sold at 40c.

Kingston and Pembroke, which had not been traded in for a long time past, this week shows a sale of 200 shares at 20c. Oriental and Miller also shows a sale this week of 500 shares at 3c.

**Boston.** April 25.

(From Our Special Correspondent.)

The market has been quite active the past week under the lead of the Montana stocks, in which the bulk of business centers. Boston & Montana continues to improve with slight reactions, only to advance to a higher level. The stock sells ex-dividend now, and at one time during the week declined from $39⅞ to $38½, but quickly recovered, and today touched the highest price on this advance, viz., $40¾, with good buying orders unfilled. Butte & Boston lost $½ to $1¼ in the early dealings, but was strong to-day, and advanced to $12½, closing strong. The sales of these two stocks aggregated about 7,000 shares.

Calumet & Hecla declared the first dividend for the year of $5 per share. The years' payments are expected to be $15 at least, and possibly $20. The stock sold at $280 ex-dividend, and is in fair investment demand. Tamarack continues to decline, selling off to-day to $1.29¼, a decline of $5½ for the week. The stockholders generally do not take kindly to the new issue of stock, and many of them are disposed to unload, hence the decline. Quincy improved from $105 to $107 with a good demand, while the scrip advanced from $49 to $50¼. Franklin is quite strong around $14, but not much can be bought at this figure; a much higher price for it is predicted. Kearsage is firm at $9¼@$9½. The reports from the Lake indicate a marked improvement in the workings of the mine, and the present price will look very cheap for the stock before the season closes. There was very little doing in Osceola this week, only small sales reported at $23@23½. A small lot of Atlantic sold at $10¾, a gain of $⅛. Tamarack, Jr., advanced to $13, and Wolverine sold at $4¼, the same as last week.

**Colorado Springs.**

BY TELEGRAPH.

Messrs. Gardner & Co. wire us the following quotations for the week ending April 25th:

| Name of Company. | 19 | 20 | 22 | 23 | 24 | 25 |
|---|---|---|---|---|---|---|
| Anaconda | .35 | .36 | .36 | .36 | .39 | .39½ |
| Argentum Juniata | 1.04 | 1.11 | 1.04½ | 1.04½ | 1.07 | 1.07 |
| Isabella | .19 | .19½ | .20 | .20 | .21 | .20 |
| Mollie Gibson | 1.03 | 1.07 | 1.13 | 1.13 | 1.08 | .05 |
| Portland | .68 | .71 | .71 | .71 | .7 | .71 |
| Union | .14½ | .15 | .15 | .15 | .14½ | .13¾ |

**Salt Lake City, Utah.** April 20.

(Special Report of James A. Pollock.)

The mining share market this week was strong from first to last. Buyers were in excess of sellers. The only selling seemed to be that of traders accepting profits on the advance of the last few weeks.

There is much new blood coming into the market, and the tendency is decidedly bullish, with only one bear factor in sight, and that is a reaction in the advancing price of silver. There were some strong advances during the week, notably those of Daly, Horn Silver, Mercur and Ontario. Alliance sold at $1.10. Anchor recorded a slight advance under sales. Centennial Eureka paid the regular dividend of $1 per share, $30,000, on the 15th. The shares are in demand, but none are offered at any price. Fully 200,000 shares of Crescent sold for the 5c. per share assessment. Daly West was a little weak at $6 50. Horn Silver advanced to $2.30 in the bidding and gives every indication of going higher. Mammoth held steady, although the heavy buying of some weeks has temporarily ceased. The stock appears to be resting easy preparatory for another advance. Morgan has resumed work. Mercur continues active and has advanced materially, $3.60 being paid for the shares to-day and none coming out at that figure. The company is certainly making an excellent showing and the new plant work ing very satisfactorily. During the month of March the mill run amounted to about 4,750 tons of ore, of a battery average of $12.29, and the value of the product amounted to a trifle over $50,000.

Silver King shares are steady and an upward movement is imminent. The market has been regaled with the usual bull rumor of the resumption of dividends. Daly was a strong favorite in the buying and had a sustaining effect upon prices. There have been many rumors of late that the company was in a position to resume the payment of dividends, but fails to do so from ulterior motives of the management. I am in a position to state very positively that the rumors are without essen tial foundation. I have reliable information to the effect that the cash balance in the hands of the treasurer and superintendent at this date amounts to $204,000, although this amount does not include some of the product for 1895 on hand and in process of treatment. The foregoing figures, coupled with the fact that earnings during the year 1894 were only $3,500 per month, as against monthly dividends of $37,500 during the period when dividends were being declared, should satisfy all parties interested that the mine is not in a position to make any payments to stockholders. I wish to state further that of the $204,000 above mentioned as the amount of cash on hand, $200,000 represents an insurance fund reserve and cannot be drawn upon. It is quite worthy of note that no mining companies in the country have been so uniformly considerate of their stockholders as the Daly and Ontario, each of them having in times past continued payments even at the risk of serious depletion of their reserve fund. What is said in regard to the Daly is applicable to the Ontario.

**San Francisco.** April 20.

(From Our Special Correspondent.)

The market this week opened very quietly on Monday and displayed very little life all through the week. The improvement which we read of elsewhere has not reached us yet. Perhaps some reason for this may be found in the peculiar conditions which affect the dealings in stocks on our exchanges which do not attract outside support.

The market closed quiet, as it has been all the week. Prices, however, have been fairly steady and no decline of any considerable amount has been noted. The closing quotations were: Consolidated California & Virginia, $3.05; Ophir, $1.65; Confidence, $1.35@$1.50; Hale & Norcross, $1.20; Mexican, 83@85c.; Crown Point, 65c.; Potosi, 50c.

A sale of Caledonia was reported at 8c. There was some dealing in the Bodies, and at one time an attempt to break down prices, but they close quite steady, Bodie Consolidated at $1.15@$1.20; Bulwer at 12c., and Mono at 20@22c. Bodie Consolidated shows a recovery from the lowest point reached during the week. No other shares outside of the Comstock were mentioned.

It is said that the nickel property at Lovelocks, Nev., has been bonded by an English syndicate.

The Good Hope Mining Company, of Amador County, Cal., has levied an assessment of 5c. per share, delinquent May 1st.

The Reward Gold Mining Company, of Nevada County, Cal., has levied an assessment of 2½c. per share, delinquent May 10th.

Mr. B. F. Leete has purchased the interest of John W. Mackay in the Eagle Salt Works in Nevada.

BY TELEGRAPH.

*San Francisco, Cal., April 26th.*—The opening quotations to-day were as follows: Best & Belcher, 78c.; Bodie, $1.10; Bulwer, 10c.; Chollar, 45c.; Consolidated California & Virginia, $2.95; Eureka Consolidated, 35c.; Gould & Curry, 45c.; Hale & Norcross, $1.25; Mexican, 79c.; Mono, 20c.; Ophir, $1.60; Savage, 29c.; Sierra Nevada, 79c.; Union Consolidated, 49c.; Yellow Jacket, 38c.

**London.** April 13.

(From our Special Correspondent.)

A recent feature of the American mining section has been the publication of the new scheme for the reconstruction of the Poorman Consolidated. Recently I noted that a new scheme was to be brought forward because of the failure of the debenture issue. The debenture issue was doomed to failure because many parties who believed in the mine were buying up blocks of ordinary stock at 1s. 6d. on the expectation of the success of the debenture issue instead of subscribing to the debentures. The usual plan of reconstructing in England is to form a new company to take over the property and issue the shares to stockholders at £1 nominally with, say 17s. 6d. credited as paid. This is to all intents and purposes identical with the system of assessment prevalent in the United States. This course was originally proposed before the debenture issue, but for some slightly vague reason the American stockholders would not consent to it. After the failure of the debenture issue, the creditors in America were going to pump the property, and would have done so before the ordinary reconstruction scheme could be carried through. Consequently the payment of the debts amounting to about £17,000 became pressing. The committee of investigation and the directors accordingly formed themselves into a transfer syndicate, paid up the necessary cash and obtained possession of the property. They are to sell it to a new English company, which is now being formed, for £17,000 cash, plus 5% commission, with the option of purchasing 50,000 shares in the new company at par, any time within nine months after commencement of crushing. The new company will have a capital of 852,150 shares of 5s. each, 4s. credited as paid, to be exchanged for the present shares in the Poorman Consolidated. The amount thus available is £42,600, of which £17,850 will go to the transfer syndicate, £12,000 for the new mill, and the remainder, £12,000 or £13,000, to working capital. It is very probable that this scheme will be carried through.

**Paris.** April 14.

(From Our Special Correspondent.)

The volume of speculation continues to increase, and while its strength is still chiefly manifested in the South African market, there is enough left to cause a notable increase of activity almost all through the list. The volume of dealings, both on the Bourse and in the Coulisse, continues to grow, and on all hands there are more signs of activity than we have witnessed for a considerable period. The South African shares have generally experienced a slight reaction, and prices are not quite so high, in spite of the continued demand for securities. Perhaps this has been the case because attention has been drawn aside a little from the older and higher priced stocks to the new and more speculative ones in the undeveloped portions of the country. The Londonderry collapse, of which I spoke last week, has given the West Australian speculators a serious setback, and it is doubtful whether any further attempt will be made for the present to hand over to our buyers these antipodean "wild cats," as you call them, "wolves," as we say here. De Lamars are finding a good market in Paris, and the buying continues quite strong. There is talk of bringing over some other American mines, but I have not been able to ascertain anything definite about it.

The silver stocks are beginning to be more talked about, although there is not much dealing in them as yet. Our great silver mine, Huanchaca, is stronger, showing a gain of several points this week, but no other silver stock has been quoted yet.

The copper shares are not strong, and Rio Tinto has shown a slight reaction on the announcement that the dividend for the second half of 1894 will be only 2%, the same as for the first half. The company's enormous deposits show no sign whatever of exhaustion, despite the removal of nearly 1,400,000 tons of ore in a year, but the low price of copper and the sharp competition are having their effect on the dividends. The other copper stocks show but little change. Tharsis and Cape Copper are holding their own, while Jerez-Lanteira has gained slightly.

With the other metal shares there have been frequent sales but very little change. Malfidano and Vieille Montagne maintain their strength, and have not lost in price, while Laurium has even gained a little. Of the lead stocks the same may be said, the story being of increased sales without much gain in price. The dealing has been most in Aguilas while Pontgibaud has found many buyers. The shares of the Societe des Metaux show some weakness and have fallen a little; this is due, however, largely to the fact that there is a great deal of floating stock on the market, and that at every opportunity the holders are trying to realize.

The metallurgical shares also show some strength and there has been more dealing. Acieries de France have shown more strength than for some time past, partly because confidence is slightly growing and people are forgetting the shock which the last report gave to values. Creusot, Chatillon-Commentry and Petin Gaudet have all sold well and there has also been some demand for Fives-Lille and Longwy. Like these stocks the iron companies have also been stronger and there has been especial demand for Mokta-el-Hadid and Huta-Bankowa.

The coal shares have been less in request than any in the list, partly because their values are high considering the dividend returns which they make, and partly, perhaps, because of the fear of more labor troubles, since there is again talk of a miner's strike. I do not think that it will result in much, but many buyers hold a different opinion.

The annual report of the Societe de Nickel, which has just been published, only brings up the accounts to June 30th last, and is not a very satisfactory document, the profits for the year amounting to 1,360,638 fr., a decrease of 864,546 fr. from the previous year. This was all absorbed by interest, general expenses and appropriations to other accounts, with the exception of 500,000 fr., which has not been devoted to dividends, but set aside as a special reserve in view of the diminution in prices of the company's products, which has been serious. The directors say that the company's hope for next year, and for the future generally, must be in the lowering of the price of production and of the increase of the market for the metal, but they do not clearly explain how this is to be brought about.

Many complaints are beginning to arise about the great quantity of minor coins of foreign countries which are in circulation in France. The copper and nickel coins of Italy are naturally found in considerable quantity, but in addition to these, there have crept in in some way a great many Greek coins and quite a number from South American and other foreign countries, which closely resemble the French coins in appearance. In some of the seaport towns, such as Marseilles and Toulon, it is said that 75% of the smaller coins in circulation are foreign, and serious trouble is being made by the tramway companies, the bureaux de tabac and other establishments which wish to refuse them. The abundance of Italian and Greek coins we can understand, especially since the Greek Government last year had a large amount of nickel coinage executed; as to the others, it is more than hinted that there have been cases where foreign countries have had such coins executed at private establishments in this country, and speculators have made an additional quantity on their own account, trusting to chance to get them into circulation. As with these coins the actual cost is a very small part of their nominal value we can readily see the profit there would be in such operations for unscrupulous parties.

There is also trouble between us and England in Africa, where our neighbor chooses to consider that French movements encroach upon her indefinite "sphere of influence," and upon assumed Egyptian rights in the upper valley of the Nile. Really it is a quarrel over a shadow, but what will you have? France cannot always submit to the insolent assumption that everything of value belongs to England of right. It would be a pity to fight over such a matter; but a limit must be put somewhere to the insular arrogance and greed of which the world has long since grown tired.

AZOTE.

## DIVIDENDS.

Calumet & Hecla Mining Company, dividend of $5 per share, payable May 11th, to stockholders of record on April 23d.

Centennial Eureka Mining Company paid a double dividend of 50c. per share ($30,000 in all), April 15th. This makes a total of $120,000 paid in dividends this year.

Montana Ore Purchasing Company, dividend No. 2 of $1 per share, or $40,000 in all, payable at the New York office, May 4th. Transfer books are closed from April 27th to May 6th.

## MEETINGS.

Church Gold Mining Company, annual meeting, at the office in San Francisco, May 6th, at 1 p. m. Transfer books close May 3d, at 3 p. m.

Don Enrique Mining Company, annual meeting, at the office, 7 Wall street, New York City, May 9th, at noon. Transfer books will be closed from April 30th to May 10th.

Goleta Mining Company, annual meeting, at the office in San Francisco, May 8th, at 1 p. m. Transfer books close May 4th, at noon.

Guild Gold Mining Company, annual meeting, at the office, 204 and 205 Crocker Building, San Francisco, Cal., May 6th, at 10 a. m.

Julia Consolidated Mining Campany, special meeting, at the office in San Francisco, May 3d, at 1 p. m. Transfer books close April 30th, at 3 p. m.

Maritime Canal Company of Nicaragua, annual meeting at the office, Nos. 54 and 56 Broad street, New York City, May 2d, at noon.

Montecito Mining Company, annual meeting, at the office in San Francisco, May 8th, at 1.30 p. m. Transfer books close May 4th, at noon.

Morgan Mining Company, annual meeting, at the office in San Francisco, May 4th, at 11 a. m. Transfer books close May 3d, at 3 p. m.

Sterling Mining Company, annual meeting, at the office in San Francisco, May 8th, at 1.45 p. m. Transfer books close May 4th, at noon.

Tamarack Mining Company, special meeting in Boston, Monday, May 27th, to act on the questions of increasing the capital stock and of changing the date of the annual meeting.

Trio Gold & Silver Mining Company, annual meeting, at the office, No. 10 Wall street, New York City, May 6th, at 3 p.m.

## DIVIDENDS PAID BY MINING COMPANIES, MARCH AND YEAR, 1895.

| NAME OF COMPANY. | Paid in March. | Paid in since Jan. 1. |
|---|---|---|
| Am. Dev. & Mg. Co., Mont. | ..... | $24,340 |
| Alaska-Treadwell, Alaska | ..... | 75,000 |
| Bald Butte, Mont | ..... | 12,500 |
| Bangkok-Cora Bell, Colo | $6,000 | 18,000 |
| Belden, F. E., Mica, N.H. | 4,000 | 14,000 |
| Bullion Beck & C., Utah | 25,000 | 100,000 |
| Centennial-Eureka, Utah | 30,000 | 90,000 |
| Champion, Cal | ..... | 6,800 |
| Con. Cal & Va., Nev | 54,000 | 162,000 |
| Copper Queen Con., Ariz. | ..... | 50,000 |
| Coptis, Nev. | ..... | 1,000 |
| De Lamar, Idaho | ..... | 100,000 |
| Elkton, Colo | ..... | 7,500 |
| Forepaugh, Colo | ..... | 16,000 |
| Gold & Globe, Colo | 3,750 | 11,250 |
| Golden Fleece, Colo | ..... | 24,000 |
| Hecla Con., Mont. | 15,000 | 45,000 |
| Homestake, So. Dak. | 31,250 | 93,750 |
| Hope of St. Louis, Mont. | ..... | 10,000 |
| Horn Silver, Utah | 50,000 | 50,000 |
| Iron Mountain, Mont. | ..... | 10,000 |
| Jackson, Cal. | ..... | 2,000 |
| Kennedy, Cal. | ..... | 95,000 |
| Mayflower Gravel, Cal. | 10,000 | 30,000 |
| Mercur, Utah | ..... | 25,000 |
| Mollie Gibson, Colo. | ..... | 50,000 |
| Montana, Ltd., Mont. | ..... | 82,500 |
| Montana Ore Purchasing Co. | ..... | 40,000 |
| Morning Star Drift, Cal. | 16,800 | 36,000 |
| Mt. Rosa, Colo. | ..... | 5,000 |
| Napa Con., Cal. | ..... | 10,000 |
| Nugget, Colo. | ..... | 5,000 |
| Osceola Con., Mich. | ..... | 50,000 |
| Portland, Colo. | 22,430 | 44,860 |
| Quincy, Mich. | ..... | 200,000 |
| Smuggler, Colo | ..... | 50,000 |
| Standard, Cal. | 10,000 | 10,000 |
| Victor, Colo | ..... | 40,000 |
| W. Y. O. D., Cal. | ..... | 3,000 |
| Total | $278,230 | $1,700,500 |

Readers of the "Engineering and Mining Journal" will confer a favor on the publishers if they will notify the "Journal" of any errors or omissions in the above table.

## ASSESSMENTS.

| COMPANY | No. | Dinqt. | Sale. | Amt. |
|---|---|---|---|---|
| Belcher, Nev. | 50 | Apr. 9 | Apr. 30 | $0.25 |
| Brunswick Con., Cal. | 8 | Apr. 20 | May 15 | .02 |
| Chemical Gold, Cal | 1 | Apr. 15 | May 4 | 2.50 |
| Crown Point, Nev. | 65 | Apr. 16 | May 7 | .25 |
| Glencoe Con., Cal. | .... | May 21 | June 18 | 25.00 |
| Gold Point Con, Nev. | .. | May 1 | ..... | .05 |
| Good Hope, Cal. | .... | May 1 | ..... | .05 |
| Grizzly Ridge, Cal. | .. | May 10 | ..... | .00½ |
| Harney Hydraulic, S. D. | 26 | Apr. 16 | May 11 | .05 |
| North Banner Con., Cal. | | May 14 | ..... | .03 |
| North San Juan, Cal. | .. | May 6 | ..... | .12 |
| Occidental Con., Nev | 18 | Apr. 23 | May 15 | .10 |
| Ophir, Nev. | 65 | May 7 | May 27 | .25 |
| Overman, Nev. | 73 | May 21 | June 11 | .10 |
| Pine Hill, Cal. | 6 | May 20 | June 10 | .05 |
| Red Jacket Con., Nev. | 5 | May 17 | June 8 | .01½ |
| Reward, Cal. | .... | May 10 | ... | .10 |
| South Eureka, Cal | 18 | May 9 | May 31 | .01 |
| Yellow Jacket, Nev. | 59 | May 21 | June 26 | .25 |

# STOCK QUOTATIONS.

## NEW YORK MINING STOCKS.*

| NAME OF COMPANY. | Location. | Par val. | Apr. 20. H. | Apr. 20. L. | Apr. 22. H. | Apr. 22. L. | Apr. 23. H. | Apr. 23. L. | Apr. 24. H. | Apr. 24. L. | Apr. 25. H. | Apr. 25. L. | Apr. 26. H. | Apr. 26. L. | Sales |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alice | Mont. | 25 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .40 | .... | 2,400 |
| American Flag.. | Colo.. | 1 | .07 | .03 | .... | .... | .06 | .... | .... | .... | .... | .... | .... | .... | 1,500 |
| Arg. Juniata | " | 2 | .... | .... | .... | .... | .... | .... | 1.15 | .... | 1.15 | .... | .... | .... | 300 |
| Belle Isle | " | 100 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| Best &-Belcher.. | " | 100 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| Bodie Cons | Cal.. | 100 | .... | .... | .... | .... | .... | .... | .... | 1.20 | 1.20 | .... | .... | .... | 200 |
| Brunswick | Cal... | 100 | .... | .... | .... | .... | .11 | .10 | .... | .15 | .17 | .17 | .15 | .... | 8,900 |
| Bulwer Cons | .... | 10 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| Chollar | Nev.. | 100 | .... | .... | .... | .... | .... | .... | .... | .... | .50 | .50 | .... | .... | 200 |
| Chrysolite | Colo.. | 50 | .19 | .... | .18 | .17 | .18 | .... | .15 | .... | .17 | .... | .... | .... | 1,400 |
| Colo. Coal & Ir.. | " | 100 | .... | .... | .... | .... | .... | .... | 7.08 | .... | .... | .... | .... | .... | 200 |
| Comstock scrip. | Nev.. | 100 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .15 | .... | 200 |
| do. T. bonds. | " | 100 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .13 | .10 | 4,500 |
| do T. stock.. | " | 100 | .... | .... | .... | .... | .06 | .... | .... | .... | .08 | .07 | .10 | .08 | 3,500 |
| Cons. Cal. & Va. | " | 100 | 3.50 | .... | 3.15 | 3.10 | .... | .... | .... | .... | 3.10 | .... | 3 10 | .... | 3,030 |
| Con. Imperial | " | 50 | .... | .... | .07 | .... | .... | .... | .... | .... | .... | .... | .... | .... | 500 |
| Crown Point | " | 100 | .72 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 100 |
| Enterprise | Colo.. | 5 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| Eureka Cons | Nev.. | 100 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| Gould & Curry.. | " | 100 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| Hale & Norcross | " | 100 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| Horn Silver | Utah. | 25 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| Iron Silver | Colo.. | 100 | .50 | .... | .25 | .... | .... | .... | .... | .... | .... | .... | .... | .... | 1,250 |
| Isabella | " | .... | .... | .... | .21 | .... | .... | .... | .23 | .... | .... | .... | .... | .... | 1,500 |
| K. & Pembroke | .... | .... | .... | .... | .... | .... | .... | .... | .... | .20 | .... | .... | .... | .... | 200 |
| Lacrosse | Colo.. | 10 | .08 | .... | .08 | .07 | .09 | .... | .09 | .08 | .08 | .... | .10 | .08 | 5,700 |
| Leadville Cons.. | " | 10 | .18 | .... | .18 | .17 | .18 | .17 | .... | .... | .... | .... | .17 | .... | 3,500 |
| Little Chief | " | 50 | .20 | .... | .... | .... | .19 | .... | .19 | .... | .... | .... | .... | .... | 1,500 |
| Mexican | Nev.. | 50 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| Mollie Gibson | Colo.. | 5 | .... | .... | 1.10 | .... | .... | .... | 1.15 | .... | .... | .... | .... | .... | 1,500 |
| Mono | Cal.. | 100 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| Nevada Queen.. | Nev.. | 100 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| Ophir | " | 100 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| Oriental & Miller | " | 100 | .... | .... | .... | .... | .03 | .... | .... | .... | .... | .... | .... | .... | 500 |
| Phoenix of Ariz | Ariz | 100 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| Plymouth | Cal.. | 100 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| Portland | Colo.. | 50 | .... | .... | .... | .... | .... | .... | .... | .80 | .... | .... | .... | .... | 100 |
| Potosi | Nev.. | 100 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| Quick S., com. | Cal.. | 100 | .... | .... | .... | .... | 4.00 | 3.10 | 4.00 | .... | .... | .... | .... | .... | 1,500 |
| do. pref. | " | 100 | .... | .... | 18.00 | .... | 19.75 | 18.00 | 19.75 | 19.50 | 20.00 | .... | .... | .... | 1,026 |
| Robinson Con. | Colo.. | 50 | .15 | .12 | .... | .... | .... | .... | .... | .... | .14 | .... | .... | .... | 1,200 |
| Scorpion | Nev.. | 100 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| Sierra Nevada.. | " | 100 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| Standard Cons.. | Cal.. | 100 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | 3.00 | .... | 100 |
| Union Cons.. | Nev.. | 100 | .... | .... | .60 | .... | .... | .... | .... | .... | .... | .... | .... | .... | 200 |
| Victor | Colo.. | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| Yellow Jacket | Nev.. | 100 | .50 | .... | .54 | .... | .... | .... | .... | .... | .55 | .... | .... | .... | 300 |

* Official quotations N. Y Stock and Cons. Stock and Petroleum Exchanges. Total shares sold, 47,995.

## BOSTON MINING STOCKS.*

| NAME OF COMPANY. | Location. | Par val. | Apr. 19. H. | Apr. 19. L. | Apr. 20. H. | Apr. 20. L. | Apr. 22. H. | Apr. 22. L. | Apr. 23. H. | Apr. 23. L. | Apr. 24. H. | Apr. 24. L. | Apr. 25. H | Apr. 25. L. | Sales |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Allouez | Mich. | 25 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| Atlantic | do. | 25 | .... | .... | .... | .... | .... | .... | 10.75 | .... | .... | .... | .... | .... | 10 |
| Bonanza | do. | 10 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| Bost & Mont. | Mont. | 25 | .... | .... | 433¾ | .... | 39.63 | 39.50 | 39.50 | 38.50 | 39.50 | 39.13 | 40.75 | 40.00 | 4,727 |
| Butte & Bost | do. | 25 | .... | .... | 12.00 | .... | 12.00 | 11.75 | 11 88 | 11.50 | 12.00 | 11.75 | 12.50 | 11.88 | 5,962 |
| Cal. & Hecla | Mich. | 25 | .... | .... | 285 | 282 | 285 | .... | 285 | .... | 290 | .... | .... | .... | 26 |
| Catalpa | Colo. | 10 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| Centennial | Mich. | 25 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| Franklin | do. | 25 | .... | .... | 14.50 | .... | 14.25 | .... | 14.00 | 13.75 | 14.00 | 13 50 | 14.50 | 14.00 | 480 |
| Kearsarge | do. | 25 | .... | .... | 9.50 | 9.25 | 9.50 | 9.38 | 9.25 | .... | .... | .... | 9.38 | .... | 885 |
| Lake Superior.. | do | 25 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| Minnesota Iron | Minn. | 25 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| NapaQuicks'ver | Cal | 2 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| Osceola | Mich. | 25 | .... | .... | .... | .... | .... | .... | 23.50 | .... | .... | .... | 23.50 | 23.00 | 30 |
| Pontiac | do. | 25 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| Quincy | do. | 25 | .... | .... | 106 | 105 | 107 | .... | 107 | 106¾ | 107 | .... | 108 | 107 | 193 |
| do. scrip | do. | .... | .... | .... | .... | .... | 49.00 | .... | 49 50 | 49.00 | 50.25 | .... | .... | .... | 43 |
| Tamarack | do. | 25 | .... | .... | 135 | .... | 133 | 132½ | 132½ | .... | 132½ | 131¾ | 130 | 125 | 311 |
| Tamarack, Jr. | do. | 25 | .... | .... | .... | .... | 12.50 | .... | 12.50 | .... | 13.00 | .... | 13.00 | .... | 230 |
| Wolverine | do. | 25 | .... | .... | .... | .... | 4.50 | .... | .... | .... | .... | .... | .... | .... | 100 |

* Official quotations Boston Stock Exchange. † Ex Dividend. Total shares sold, 13,070.

## DENVER MINING STOCKS.* Week ending April 20.

| NAME OF COMPANY. | Location. | Par value. | Opening | Highest. | Lowest. | Closing. Bid. | Closing. Ask. | Sales. |
|---|---|---|---|---|---|---|---|---|
| Amity | Leadville, Colo. | ..... | .00[illegible] | .01 | .00[illegible] | .0 9½ | .01 | 25,000 |
| Anaconda | Cripple Creek, " | $5 | .34½ | .38 | .34½ | .34½ | .38 | 2,000 |
| Aola | " " | 1 | .006 | 007 | 006 | .005 | .007 | 30,000 |
| Bangkok-Cora Beli | Leadville, " | 1 | .22 | .22 | .18½ | .18½ | .19 | 64,000 |
| Big Six | " " | ..... | .10 | .11¼ | .11¼ | .11¼ | .11½ | 15,000 |
| Boston-Idaho, pref | Caribou Dist., B. C. | ..... | 23 | .24 | .23 | .23 | .24 | 4,000 |
| Fannie Rawlings | Leadville, Colo. | 1 | .... | .... | .... | .... | .... | .... |
| Forepaugh | " " | ..... | .65 | .75 | .65 | .65 | .75 | 6,000 |
| Gold & Globe | Cripple Creek " | 1 | .05½ | .08½ | .05½ | .07 | .07½ | 49,000 |
| Gold Standard | " " | 1 | .03¾ | .03¾ | .03¾ | .03¾ | .03½ | 26,000 |
| Justice | Gilpin County, " | 1 | .03¼ | .03½ | .03¼ | .03¾ | .03½ | 27,000 |
| Mollie Gibson | Aspen, " | 5 | 1 20 | 1.20 | 1.03 | 1.04 | 1.04 | 1,000 |
| Mt. Rosa | Cripple Creek, " | 1 | .03½ | .04¾ | .03½ | .03½ | .03¼ | 7,000 |
| Pharmacist | " " " | 1 | .05½ | .06½ | .05¼ | .05¼ | .05¼ | 31,000 |
| Work | " " " | 1 | .02½ | .02¾ | .02½ | .02½ | .02¾ | 29,000 |

* Official quotations Colorado Mining Stock Exchange. Total shares sold, 348,000.

## COLORADO SPRINGS MINING STOCKS.*

| NAME OF COMPANY.† | Par val | April 15. H. | April 15. L. | April 16. H. | April 16. L. | April 17. H. | April 17. L. | April 18. H. | April 18. L. | April 19. H. | April 19. L | April 20. H. | April 20. L. | Sales. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Alamo | $1 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .01⅜ | .01⅛ | 14,000 |
| Anaconda | 5 | .... | .... | .35 | .31½ | .34½ | .... | .... | .... | .34½ | .... | .... | .... | 3,175 |
| Argent'm,J | 2 | 1.10½ | 1.08 | 1 12 | 1.08 | 1.14 | 1.12 | 1.15 | 1.11 | 1.06⅝ | 1.00 | 1.10½ | 1 07⅛ | 30,822 |
| Bob Lee | 1 | .0055 | .005 | .0055 | .... | .006 | .... | .0065 | .005 | 006 | .... | .006 | .... | 71,000 |
| CrippleC C | 1 | .... | .... | .01⅝ | .... | .... | .... | .01⅝ | .... | .... | .... | .... | .... | 4,000 |
| C. O. D. | 1 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| Cr. & C. C. | 1 | .... | .... | .... | .... | .01⅛ | .... | .01⅝ | .01⅝ | .01⅞ | .... | .... | .... | 37,500 |
| Fanny R. | 1 | .... | .... | .... | .... | .03¾ | .... | .... | .... | .... | .... | .... | .... | 500 |
| Franklin | 1 | .... | .... | .006 | .... | .... | .... | .... | .... | .005 | .0055 | .... | .... | 3,000 |
| Gold & Gl. | 1 | .05¼ | .... | .... | .... | .05¼ | .... | .05¼ | .... | .06 | .05¼ | .07¼ | .07⅛ | 4,700 |
| Isabella | 1 | .20 | .19¼ | .19¼ | .19 | .... | .... | .19 | .18¾ | .19 | .... | .19¼ | .19⅛ | 28,000 |
| Mollie G. | 5 | 1.30 | 1 12½ | 1.12 | 1.04¾ | 1.10 | 1.07 | 1.06¾ | 1.06 | 1.03 | 1.02⅛ | 1 05 | 1.01 | 9,625 |
| Mt. Rosa | 1 | .... | .... | .03⅝ | 03¾ | .03½ | .... | .03⅞ | .... | .... | .... | .... | .... | 8,670 |
| Pharmacist | 1 | .06 | .... | .... | .... | .05¾ | .05 | .05½ | .05⅜ | .... | .... | .... | .... | 67,500 |
| Portland | 1 | .68 | .65 | .68 | .67 | .71¼ | 67 | .71½ | .70 | .68½ | .67 | .70½ | .69½ | 28,200 |
| Specimen | 1 | .... | .... | .... | .... | .... | .... | .02¼ | .... | .... | .... | .... | .... | 1,000 |
| Summit | 1 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .06¾ | .... | 2,000 |
| Union | 1 | .14⅜ | .14⅜ | .14¾ | .... | .14⅜ | .13⅝ | .14½ | .14¾ | .14¾ | .14½ | .14¾ | .14⅝ | 23,200 |
| Work | 1 | .... | .... | .02¾ | .03⅜ | .02½ | .02¾ | .... | .... | .... | .... | .... | .... | 51,500 |

* Official quotations Colo. Springs Mining Stock Association. Total shares sold, 391,462.
† All the companies are located in Colorado.

## ASPEN MINING STOCKS.* April 19.

| NAME OF COMPANY. | Location. | Par value. | Bid. | Asked. | Shares sold. | Price. |
|---|---|---|---|---|---|---|
| Alta Argent | Aspen, Colo. | $1.00 | $0.09 | $0.10 | 11,000 | $0.09 |
| Argentum Juniata | " " | 2 00 | 1.00 | 1.04⅛ | 7,000 | 1.04⅛ |
| Aspen Contact | " " | 5.00 | ..... | .25 | .... | .... |
| Aspen Deep Mining | " " | 1.00 | .08 | .09 | 15,000 | .09 |
| Best Friend | " " | 1.00 | .04 | .04¼ | 3,000 | .04 |
| Bi-metallic | " " | 1.00 | .02 | .02 | 3,450 | .02 |
| Bushwhacker | " " | 1.00 | .06½ | .07 | 28,000 | .07 |
| Caverhill Consolidated | " " | 1.00 | .19 | .20 | 6,000 | .20 |
| Della S | " " | 5.00 | .70 | .72¼ | 4,000 | .70 |
| Gold Valley Placer | Routt Co., | 1.00 | .05⅜ | .07 | 23,000 | .07 |
| Little Annie | Aspen, " | 1.00 | .02½ | .03¾ | 73,000 | .02¾ |
| Mineral Farm Con. | " " | 1.00 | .11⅜ | 12 | 6,000 | .12 |
| Mollie Gibson | " " | 5.00 | 1.00 | 1.02½ | 3,500 | 1.02½ |
| Old Colony Gold | Taylor River, " | 1.00 | .75 | .75 | 2,000 | .75 |
| Sheep Mt. T. & M | Crystal, " | 1.00 | ..... | .25 | .... | .... |
| Smuggler | Aspen, " | 1.00 | 1.75 | 2.00 | 1,300 | 2.00 |
| West Aspen Mountain | " " | 1.00 | .... | .... | .... | .... |

* Special report by Arkell, MacMillan & Stewart. Total shares sold, 188,250.

## COAL AND COAL RAILROAD STOCKS.*

| NAME OF COMPANY. | Par value. | April 20. H. | April 20. L. | April 22. H. | April 22. L. | April 23. H. | April 23. L. | April 24. H. | April 24. L. | April 25. H | April 25. L. | April 26. H. | April 26. L. | Sales |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Am. Coal | 25 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| Balt. & Ohio | 100 | 55¾ | .... | 56 | 55⅝ | 56⅞ | .... | 56¼ | 55⅝ | 56 | 55⅜ | 57¼ | 55⅝ | 3,035 |
| Buff., R. & P. | 100 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| do. pref. | 100 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| Ches. & Ohio. | 100 | 18¾ | 18¼ | 19 | 18¼ | 19¼ | 18⅝ | 19⅜ | 18¾ | 19¼ | 18⅝ | 19⅜ | 19 | 22,739 |
| do. 1st pref. | 100 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| Col.C & I.Dev | 100 | 6¾ | 6¾ | 7 | ..... | 7 | ..... | 7⅛ | 7¼ | 7⅛ | ..... | .... | .... | 1,450 |
| Col. Fuel & I. | 100 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| do. pref. | 100 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| Col.,H.V.&Tol | 100 | 26½ | 26⅛ | 26¾ | 26 | 26⅝ | 26 | 26¼ | ..... | 27 | 26 | 27 | 26¾ | 3,505 |
| do. pref. | 100 | .... | .... | 67 | .... | .... | .... | .... | .... | .... | .... | .... | .... | 10 |
| Col. & H.Coal | 100 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| do. pref. | 100 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| Con. Coal | 100 | .... | .... | .... | .... | .... | .... | 30 | .... | .... | .... | .... | .... | 100 |
| Del. & Hud.C. | 100 | 126¾ | .... | 130 | 127¼ | 130½ | 128¾ | 130¾ | 127¾ | 128 | 126 | 128¾ | 127½ | 17,865 |
| Del., L. & W | 50 | 160¾ | .... | 162¾ | 160¾ | 162 | 161½ | 162 | 159 | 159⅞ | 158 | 159¾ | 158¾ | 11,928 |
| Lake Erie&W | 100 | 21¾ | 20¾ | 21¾ | 20¾ | 20⅞ | 20⅜ | 20¾ | 20¼ | 20⅝ | 20⅜ | 19½ | 20¼ | 9,190 |
| do. pref. | 100 | 78 | .... | 78 | 77¾ | 78⅜ | 78 | 78 | 77¾ | 78 | 77¾ | 77 | .... | 2,301 |
| ‡LehighC.&N. | 50 | .... | .... | 46¾ | 46 | 46⅛ | 46 | 46¼ | 46 | 46¼ | 46 | .... | .... | 160 |
| ‡Lehigh Val. | 50 | .... | .... | 32¾ | 32¾ | 33 | 32½ | 33⅜ | 32¾ | 33⅜ | 33 | .... | .... | 1,924 |
| Lehigh&W.B. | 50 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| Maryl'd C.pref | 100 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| Morris & Ess'x | 100 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| N. J. Central | 100 | 95 | 94¾ | 97¾ | 95 | 97 | 95½ | 97 | 94¼ | 95 | 93¾ | .... | .... | 30,200 |
| N. Y., L. & W. | 100 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| N. Y.,L.E.&W | 100 | 11¼ | 11 | 11⅜ | 11¼ | 12¼ | 11⅝ | 12⅛ | 12¼ | 12⅝ | 12⅛ | 12¼ | 12⅛ | 13,568 |
| do. pref. | 100 | .... | .... | .... | .... | 25 | 24¾ | .... | .... | 24¾ | 24½ | 25 | .... | 1,100 |
| N.Y.,Susq.&W | 100 | .... | .... | 13⅜ | 12¾ | 13¾ | 12¾ | 13½ | 13 | 13 | .... | 13 | 12⅝ | 3,769 |
| do. pref. | 100 | 37 | 36⅜ | 37⅜ | 36⅜ | 37⅜ | 36½ | 37⅜ | 36¾ | 36¾ | 36⅜ | 36½ | .... | 6,685 |
| N. & West | 50 | 3¾ | .... | 3¾ | .... | 3¾ | .... | 3¾ | 3¾ | 4 | .... | .... | .... | 1,500 |
| do. pref. | 50 | 15⅜ | 15 | 15¾ | .... | 15¾ | .... | 17 | .... | 16¾ | .... | .... | .... | 910 |
| Penn. Coal | 50 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| ‡Penn. R. R. | 50 | 52¾ | 52¼ | 52¼ | 52 | 52⅝ | 52⅜ | 52¾ | 52½ | 52¾ | 52¼ | .... | .... | 3,706 |
| Phil. & Read. | 50 | 14½ | 14⅜ | 15⅛ | 14¾ | 16⅜ | 15¾ | 16⅜ | 15 | 15¾ | 14⅜ | 16¼ | 15 | 18812 |
| Tenn. C. & I. | 100 | 21⅜ | 20¾ | 23⅜ | 21¼ | 22¾ | 21⅜ | 22⅜ | 21⅛ | 22 | 21⅜ | 22¼ | 21⅜ | 16,116 |
| do. pref. | 100 | .... | .... | .... | .... | 80 | .... | 80 | .... | 80 | .... | .... | .... | 157 |
| Wheel. & L. E | 100 | 12¾ | .... | 12¾ | .... | 13¾ | 12¾ | 13¾ | 13 | 13¾ | 13¾ | 13¾ | 13 | 8,889 |
| do. pref. | 100 | .... | .... | 43¾ | .... | 44¾ | 44 | .... | .... | 44 | .... | 43¾ | .... | 510 |

* Official quotations N. Y. Stock Exchange. ‡ Phila. quotations. Total shares sold, 349,683.

## INDUSTRIAL AND TRUST STOCKS.*

| NAME OF COMPANY. | Par value. | April 20. H. | April 20. L. | April 22. H. | April 22. L. | April 23. H. | April 23. L. | April 24. H. | April 24. L. | April 25 H. | April 25 L. | April 26. H. | April 26. L. | Sales |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Adam s' Exp | 100 | .... | .... | 147½ | .... | 148 | .... | .... | .... | .... | .... | .... | .... | 19 |
| Am. Cot Oil | 100 | 27½ | 26¾ | 28¾ | 27¾ | 28¼ | 28 | 27¾ | 27½ | 27¾ | 27¼ | .... | .... | 5,385 |
| do. pref. | 100 | 76¾ | 75¾ | 77 | 76½ | .... | .... | 76 | .... | 77 | .... | 77 | 76¼ | 2,225 |
| Am. Expr | 100 | .... | .... | 113 | .... | 112½ | .... | 115 | .... | .... | .... | .... | .... | 131 |
| Am. Sug Rf. | 100 | 106½ | 105¾ | 106¾ | 105⅝ | 106⅞ | 105¾ | 107 | 106¼ | 106¾ | 106¾ | 109¼ | 107¼ | 18765 |
| do. pref. | 100 | 96¾ | .... | 97¼ | 96¾ | 97 | .... | 97¾ | 97 | 98⅛ | 97⅝ | 99 | 98¼ | 4,350 |
| Edis.E.I.Co. | 100 | .... | .... | 97½ | .... | 97¼ | .... | 97⅝ | .... | 98 | .... | .... | .... | 280 |
| Gen.Electric | 100 | 33¾ | 33¼ | 33¾ | 33¼ | 33¾ | 33½ | 34⅛ | 33¾ | 34¼ | 33¾ | 34¼ | 33¾ | 19,800 |
| Nat. Lead Co | 100 | 34⅜ | 34⅛ | 34⅜ | 33⅞ | 34 | 33½ | 34 | 33⅝ | 34¼ | 32⅞ | 33½ | 32⅜ | 16,905 |
| do. pref | 100 | 88 | .... | 89¼ | 89 | 89 | 88¼ | 89¾ | 88¾ | 89 | 88½ | 88¾ | .... | 2,761 |
| Nat. Lins. Oil | 100 | 21⅜ | .... | .... | .... | 24 | .... | 24 | .... | .... | .... | .... | .... | 400 |
| U.S.Cord.Co. | 100 | 5¾ | .... | 6 | 5¾ | 6¾ | 6 | 7 | 6½ | 6⅝ | 6¼ | 6¼ | 5¾ | 9,400 |
| do. pref | 100 | 9⅝ | 9⅛ | 10¼ | 9 | 10¾ | 9¾ | 10⅝ | 10¼ | 10½ | 10¼ | 10⅝ | 10¼ | 4,723 |
| do. gtd. | 100 | .... | .... | 18 | .... | 20½ | 18¾ | 20 | .... | 19 | 18 | .... | .... | 2,284 |
| U.S. Express | 100 | .... | .... | .... | .... | 42 | .... | 42¾ | 41¾ | .... | .... | .... | .... | 59 |
| U. S. Rubber | 100 | 39¾ | .... | 39¾ | .... | 39¾ | 39¾ | 39½ | .... | 39¾ | 39⅜ | 40¾ | 39¾ | 3,530 |
| do. pref | 100 | 94⅜ | .... | 94 | .... | 94 | 93¾ | .... | .... | 94 | .... | .... | .... | 8.2 |
| Wells, Fa. Ex | 100 | .... | .... | .... | .... | 107¾ | 106 | .... | .... | 107 | .... | .... | .... | 31 |
| West. Union | 100 | 88¾ | 88⅛ | 89⅜ | 88¼ | 89⅜ | 88¾ | 89⅝ | 89¼ | 89 | 89¼ | 88¾ | 88¼ | 18,101 |
| †Westingh'se Air Brake | 50 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |

*Official quotations N. Y. Stock Exchange. † Pittsburg quotations. Total shares sold, 279,893.

## MONTANA STOCKS.* HELENA, April 2.

| NAME OF COMPANY. | Location. | Co.'s office. | Par value. | Bid. | Asked. | Shares sold. | Price | Date. |
|---|---|---|---|---|---|---|---|---|
| Alice | Silv.Bow Co, Mont. | Butte, Mont. | $25 | $0.30 | $0.25 | .... | .... | .... |
| Am. Dev. Co | Mont. | Butte, " | 1 | 8.60 | 5.00 | 500 | $3.00 | Dec. 3 |
| Bald Butte | L.& Cl'keCo., Mont. | Helena " | 1 | 3.50 | 4.00 | 300 | 3 60 | Jan 30 |
| Benton Group | Neihart " | W.Sph. S.Mont. | 5 | .10 | .20 | .... | .... | .... |
| Bi-Metallic | Granite Co. " | St. Louis, Mo. | 25 | 4.00 | 5.00 | .... | .... | .... |
| Combination | " " " | Helena, Mont. | 10 | .75 | .85 | 500 | .72½ | Jan. 29 |
| D. Eagle (S. H.) | Fergus Co., " | Chicago, Ill. | 1 | .... | .... | .... | .... | .... |
| Elizabeth | Granite Co., " | St. Louis, Mo. | 10 | .15 | .18 | .... | .... | .... |
| Granite Mt | " " " | " " " | 25 | 1.50 | 2.00 | .... | .... | .... |
| Hope | " " " | " " " | 10 | ..... | 2 50 | .... | .... | .... |
| Hope | B.JeffersonCo " | Helena, Mont. | 5 | ..... | 5 00 | .... | .... | .... |
| Hel'a & Frisco | Shoshone Co., Id. | " " | 5 | .... | .... | .... | .... | .... |
| Iron Mountain | Missoula Co., Mont. | " " | 10 | .50 | .60 | 800 | .50 | Mar. 12 |
| Ontario | DeerLodgeCo. " | " " | 1 | 1.00 | 1.25 | 500 | 1.00 | Jan. 25 |
| Poorman (Coeur d'Alene) | Shoshone Co., Id. | Butte " | 10 | .25 | .40 | .... | .... | .... |
| Royal Gold | D'r LodgeCo., Mont | D'r Lodge, " | 5 | .75 | 1.00 | .... | .... | .... |

* Special Report by Samuel K. Davis.

## San Francisco Stocks.*

| NAME OF COMPANY. | Location | Closing Quotations. Apr. 19 | Apr. 20 | Apr. 22. | Apr. 23 | Apr. 24. | Apr. 25. |
|---|---|---|---|---|---|---|---|
| Alpha | Nev.. | .... | .... | .... | .... | .... | .... |
| Alta | " .. | .17 | .15 | .12 | .15 | .17 | .16 |
| Belcher | " .. | .68 | .61 | .64 | .64 | .66 | .65 |
| Belle Isle | " .. | .... | .... | .... | .... | .... | .... |
| B. & Relch | " .. | .85 | .84 | .75 | 75 | 78 | .78 |
| Bodie | Cal.. | 1.05 | 1.15 | 1.15 | 1.10 | 1.15 | 1.15 |
| Bulwer | " .. | .12 | .10 | 10 | 10 | 10 | .10 |
| Chollar | Nev.. | .51 | .48 | 47 | .45 | .45 | .42 |
| Com'w'lth | " .. | .... | .... | .... | .... | .... | .... |
| Con.C.&V. | " .. | 3 00 | 3.00 | 2 85 | 2.85 | 2.85 | 2.95 |
| Crown Pt. | " .. | 67 | .64 | .60 | .60 | .60 | .60 |
| E'r'ka Con | " .. | .... | .... | .... | .... | .... | .... |
| G'd & C'y | " .. | .51 | .5[illegible] | .46 | .44 | .46 | .0 |
| Hale & N. | " .. | 1.20 | 1.25 | 1.10 | 1.15 | 1.25 | 1.30 |
| Mexican | " .. | .85 | .84 | .81 | .77 | .80 | .80 |
| Mono | Cal | .22 | .... | .... | .... | .20 | .14 |
| Ophir | Nev.. | 1.65 | 1.60 | 1.55 | 1.55 | 1 60 | 1.65 |
| Potosi | " .. | .50 | .48 | .45 | .45 | .46 | .... |
| Savage | " .. | .32 | .32 | .29 | .26 | .28 | .29 |
| Sierra Nev | " .. | .81 | .82 | .79 | .74 | .80 | .80 |
| UnionCon | " .. | .53 | .53 | .50 | .48 | .50 | .50 |
| Utah | " .. | .07 | .... | .... | .06 | .... | .06 |
| Yel. Jack. | " .. | .45 | .42 | .38 | .35 | .40 | .39 |

* Par value of all shares quoted is $100.

## Baltimore Stocks.* April 25.

| Name of Company. | Location. | Par value. | Bid. $ | Ask. |
|---|---|---|---|---|
| Balt. & N. C. | N. C. | $5 | ..... | $0 02 |
| Balt. M. & S. | " | ..... | ..... | .02 |
| Con. Hill | " | 5 | ..... | .02 |
| Con. Coal | Md.. | 100 | ..... | 31.50 |
| Con. G. & C | N. C. | 5 | ..... | .04 |
| Ga. C. Coal | Md.. | 100 | 103.25 | 104.00 |
| How. C. & C. | " | 5 | 1.10 | 1.20 |
| Lake Chrome | " | 5 | ..... | .10 |
| Ore Knob | " | 10 | ..... | .50 |
| Silver Valley | ..... | ..... | ..... | 20.00 |

*Official quotations Baltimore Exch'ge.

## Duluth Stocks.* April 20.

| Name of Company. | Par value | Price | Bid. | Asked |
|---|---|---|---|---|
| Adams Iron Co. | 10 | ..... | $3.00 | $3.50 |
| Biwabik M.I.Co. | 100 | 19.50 | 20.00 | 21.00 |
| Chandler Ir.Co. | 25 | ..... | ..... | 27.00 |
| Clev.Cliffs I.Co. | 100 | ..... | 25.00 | 32.00 |
| Gr't No. M.Co. | 100 | ..... | 1.75 | 2.00 |
| Gr't West.M.Co. | 100 | ..... | 1.00 | 1.50 |
| Jackson Ir. Co. | 25 | ..... | ..... | 60.00 |
| L. Sup.C. Ir. M. | 100 | 12.00 | 12.50 | 13.00 |
| L. Sup.(Marq'te) | 25 | ..... | 17.00 | 20.00 |
| Mes. C., L.&E.Co | 10 | 5.00 | ..... | 4.00 |
| Mes. Chief I.Co. | 100 | 2.25 | 2.50 | 3.00 |
| Mes. Mt. Ir. Co. | 100 | 16.50 | 16.00 | 17 00 |
| Met. L. & I. Co. | 25 | ..... | ..... | 60.00 |
| Minnes'ta Ir.Co. | 100 | 40.00 | 45.00 | 55.00 |
| Mountain Ir.Co. | 100 | 42.00 | 45.00 | 50.00 |
| Ohio Mining Co. | 100 | 4.00 | 4.00 | 5.60 |
| Pioneer Ir. Co. | 25 | ..... | .25 | 1.00 |
| Pitts. & L.A.Co. | 100 | ... | 55.0 | 62.00 |
| Sec'ty L.& E.Co | 10 | ..... | 16.0 | 18 00 |

* Official quotations Duluth Exchange.

## Pittsburg Stocks.* April 25.

| Name of Company. | Par value | Last sale. | Bid. | Ask. |
|---|---|---|---|---|
| COAL STOCKS: | | | | |
| N.Y. & Cl. G. C. | $50 | ..... | $35 | $55 |
| GAS STOCKS: | | | | |
| Allegheny | 100 | $48½ | 47 | 48 |
| Chartiers Val. | 100 | ..... | 7¾ | 9 |
| Ohio Valley | 50 | ..... | ..... | 36 |
| People's Nat. Gas | 50 | ..... | 31 | 40 |
| People's Nat. Gas and Pipeage | 25 | ..... | 12¾ | 13 |
| Pennsylvania | 50 | ..... | 6½ | 8¾ |
| Phila. Co. | 50 | 18¼ | 17½ | 17⅞ |
| Wheeling | 50 | 40 | 39 | 40 |
| MINING STOCKS: | | | | |
| Lustre | 10 | 12½ | 12½ | 14 |
| OIL CO. STOCKS: | | | | |
| Tuna Oil Co. | ..... | ..... | ..... | 35 |
| Washington | 50 | ..... | ..... | 50 |

*

## MEXICO. Week Ending April 19.

| Name of Company. | State. | No. of shares. | Last dividend. | Last assessment. | Prices. Opening. | Prices. Closing. |
|---|---|---|---|---|---|---|
| Angustias | Guanajuato | 2,400 | $15.00 | | $1,090 | $1,080 |
| Asturiana y Anexas | Zacatecas | 2,500 | 10.00 | | 4 0 | 425 |
| Cerro Colorado | Chihuahua | 15,000 | | | 28 | 28 |
| Cinco Senores | Guanajuato | 2,000 | | | 1,400 | 1,420 |
| do. Free stock | " | 400 | | | 1,380 | 1,390 |
| Concepcion y Anexas | S. Luis Potosi | 2,500 | | | 225 | 230 |
| El Oro | Guanajuato | 500 | | $0.02 | 120 | 120 |
| do. pref | " | 2,000 | 2.00 | | 120 | 120 |
| Hunutla Sta. Ana | Morelos | 4,000 | 1.50 | | 100 | 100 |
| Luz de Berta | Michoacan | 3,000 | | 0.50 | 40 | 50 |
| do. Free stock | " | 1,000 | | | 30 | 40 |
| Luz de Maravillas | Hidalgo | 1,100 | | | 400 | 400 |
| Purisima de los Com. | Zacatecas | 2 4 0 | | | 91 | 90 |
| Real del Monte | Hidalgo | 2,554 | 20.00 | | 1,260 | 1,265 |
| Rosario y Anexas | Durango | 4,800 | | | 120 | 120 |
| do. pref | " | 2,400 | | | 80 | 80 |
| San Rafael del Oro | Guanajuato | 3,000 | | | 200 | 200 |
| Sta. Gertr. y Anexas | Hidalgo | 28 800 | 1.50 | | 79 | 79 |
| do. free stock | " | 9,600 | 1 03 | | 20 | 20 |
| Sta Maria de la Paz | S. Luis Potosi | 2,400 | | | 250 | 280 |
| Tlaxingo | Puebla | 2,400 | | | 40 | 40 |
| Zomelahuacan (gold) | Vera Cruz | 5,000 | | 1 50 | 100 | 100 |
| Zona Min. de Pozos | Guanajuato | 2,400 | | 1.50 | 170 | 150 |

NOTE.—In most Mexican mining companies the shares have no fixed par value. The capital is formed of a certain number of shares, the total value not being named. Prices are in Mexican dollars.

## Valparaiso, Chile. March 2.
(Special Report of Jackson Brothers.)

| Company. | Capital. | Share value. N'minal. | Share value. Paid up. | Last dividend. | Prices. Bid. | Prices. Asked. | Prices. Last sale |
|---|---|---|---|---|---|---|---|
| Arco Prat | $3,300,000 | $100 | $100 | 0½ per cent. | $37 | 38 | $37½ |
| Caracoles | 315,000 | 100 | 100 | 5 " | ..... | 50 | 50 |
| Descub. de Hauntajaya | 1,000,000 | 100 | 100 | 2 " | 43 | 45 | 55 |
| Oruro | 800,000 | 1,000 | 1,000 | ..... | 2,800 | 3,000 | 2,900 |
| S. Agustin de Huantajaya | 1,500,000 | 100 | 100 | 2½ per cent. | 98 | 100 | 98 |
| Todos Santos | 2,000,000 | 100 | 100 | 0½ " | 17¾ | 18 | 18 |
| Nitrate Co's. | | | | | | | |
| Azua Santa | 5,000,000 | 500 | 500 | 6 " | 160 | 170 | 150 |
| Autofogasta | 2,000,000 | 300 | 300 | 10 " | 215 | 220 | 215 |
| Union | 3, 00,000 | 300 | 100 | 3 " | 85 | 86½ | 87 |

Values are in Chilean pesos or dollars.

## Salt Lake City Stocks.* April 20.

| Name of Company. | Par val. | Bid. | Asked. | Actual selling price. | Name of Company. | Par val. | Bid. | Asked. | Actual selling price. |
|---|---|---|---|---|---|---|---|---|---|
| Alliance | $1 | $1.00 | 1.20 | $1.15 | Horn Silver | 25 | 2.30 | 2.65 | 2.50 |
| Am. Nat. G's | ..... | .15 | .30 | .25 | Little Pittsburg | ..... | ..... | .25 | .25 |
| Anchor | 20 | 3.20 | 3.60 | 3.50 | Mammoth | 25 | 1.00 | 1.20 | 1.15 |
| Bogan | 1 | .25 | .50 | .50 | Morgan | 25 | .70 | .90 | .75 |
| Bull-Beck | 10 | 7.50 | 8.50 | 8.75 | Mercur | 25 | 3.60 | 4.00 | 3 75 |
| Cane Spr'gs | ..... | .50 | .85 | .75 | Ontario | 100 | 10.50 | 12.50 | 12.00 |
| Cent. E'reka | 50 | 41.50 | ..... | ..... | Silver King | 20 | 13 50 | 15.00 | 14.50 |
| Cleve. Con. | 1 | ..... | .50 | .50 | Silver Spar. | 5 | ..... | ..... | ..... |
| Comstock | 25 | .15 | .20 | .25 | Tetro | 1 | ..... | .25 | .25 |
| Dalton | 5 | .00½ | .01½ | .01 | Utah | 1 | .50 | 1.00 | .75 |
| Daly | 20 | 6.50 | 7.75 | 7.50 | Utah Lime | 10 | 3 50 | 4 25 | 4.00 |
| Daly West | 20 | 6 50 | 7.00 | 6.75 | | | | | |

*Special Report by James A. Pollock.

## Philadelphia Stocks.* April 25.

| Name of Company. | Par value | Bid. | Ask. |
|---|---|---|---|
| Bethlehem Iron Co | ..... | ..... | 80 |
| Cambria Iron Co | 50 | ..... | $47 |
| Penn. Nat. Gas | ..... | ..... | 49½ |
| Penn. Salt Co | 50 | 95 | 97 |
| Westmoreland Coal | 50 | 50 | 50¼ |

*Official quotations Phila. Exchange.

## Shanghai, China. Mar. 22.

| Name of Co. | Par. | Last div. | Price. |
|---|---|---|---|
| Jelebu Mg Co. | $5 | $0.25 | Tls. 3·26 |
| Punj. Mg. Co. | 4 | ..... | " 4·75 |
| do. pref. | 1 | ..... | " 1·28 |
| Raub A'lianG. | £1 | 10½d. | " 2·85 |
| Sneridan Con. | Tls. 100 | ..... | " 1·00 |

## LONDON. April 6.

| Name of Company. | Par value. | Quotations. Buyer. | Quotations. Seller. |
|---|---|---|---|
| AMERICANS: | | £ s. d. | £ s. d. |
| Alaska-Mexican | £1 | 17 6 | 1 0 0 |
| Alaska Treadwell | 5 | 3 2 6 | 3 7 6 |
| American Belle | 1 | 2 0 | 2 6 |
| De Lamar | 1 | 1 8 0 | 1 9 0 |
| Elkhorn | 1 | 10 3 | 10 9 |
| Harquahala | 1 | 4 0 | 5 0 |
| Holcomb Valley | 5s. | 3 0 | 3 6 |
| Jay Hawk | £1 | 3 0 | 3 6 |
| Montana | 1 | 11 6 | 12 6 |
| New Guston | 1 | 10 0 | 12 6 |
| Palmarejo (Mex.) | 1 | 1 9 | 2 0 |
| Plumas-Eureka | 2 | 12 6 | 15 0 |
| Poorman | 5s. | 1 6 | 1 9 |
| Richmond | £5 | 8 9 | 11 3 |
| Sierra Buttes | 2 | 10 0 | 12 6 |
| Springdale | 4s. | 3 6 | 3 9 |
| SOUTH AMERICANS: | | | |
| Colombian Hydraulic | £1 | 10 0 | 11 3 |
| Frontino & Bolivia | 1 | 1 6 3 | 1 8 9 |
| Tolima. A shares | 5 | 7 5 0 | 7 15 0 |
| " B " | 5 | 6 10 0 | 7 0 0 |
| COPPER STOCKS: | | | |
| Cape Copper | 2 | 1 7 6 | 1 10 0 |
| " preferred | 2 | 1 18 9 | 2 1 3 |
| Copiapo | 2 | 1 11 8 | 1 13 9 |

| Name of Company. | Par value. | Quotations. Buyer. | Quotations. Seller. |
|---|---|---|---|
| COPPER STOCKS: | | £ s. d. | £ s. d. |
| Rio Tinto | £10 | 12 13 9 | 12 16 3 |
| Tharsis | 2 | 4 7 6 | 4 12 6 |
| AUSTRALIANS: | | | |
| Bayley's Reward | 1 | 8 6 | 9 0 |
| Broken Hill Proprietary | 8s. | 1 18 6 | 1 19 6 |
| Mt Morgan Gold | 17s. 6d. | 2 12 6 | 2 15 0 |
| INDIANS: | | | |
| Champion Reef | £1 | 4 10 0 | 4 12 |
| Mysore | 1 | 2 18 9 | 3 1 3 |
| Nundydroog | 1 | 2 3 9 | 2 6 3 |
| Ooregum | | 3 2 6 | 3 5 0 |
| " preferred | | 3 16 3 | 3 18 9 |
| SOUTH AFRICANS: | | | |
| British S. Africa Co | 1 | 3 7 6 | 3 10 0 |
| City & Suburban | 1 | 24 10 0 | 24 12 6 |
| Crown Reef | 1 | 10 10 0 | 10 12 6 |
| De BeersCon (diam'nd) | 5 | 21 8 9 | 21 11 3 |
| Durban-Roodepoort | 1 | 7 7 6 | 7 10 0 |
| Ferreira | 1 | 16 15 0 | 17 5 0 |
| Geldenhuis Estate | 1 | 6 7 6 | 6 10 0 |
| Jagersfontein (diam'd) | 5 | 10 17 6 | 11 2 6 |
| Langlaagte Estate | 1 | 4 11 3 | 4 13 9 |
| New Primrose | 1 | 6 12 6 | 6 15 0 |
| Robinson | 5 | 8 15 0 | 9 0 0 |
| Simmer & Jack | 1 | 14 2 6 | 14 7 6 |

## PARIS. Week ending April 13.

| Name of Company. | Country. | Product. | Capital Stock. | Par value. | Divs. last year. | Prices. Op'ning. | Prices. Closing. |
|---|---|---|---|---|---|---|---|
| | | | Francs. | Fr. | Fr | Fr. | Fr. |
| Aciéries de Creusot | France | Steel mfrs | 25 000 000 | 2,000 | 100.00 | 1,995.00 | 1,980.00 |
| " " Firminy | " | " | 3,000,000 | 500 | 85.00 | 1,595.00 | 1,600.00 |
| " " Fives-Lille | " | " | 12,000,000 | 500 | 35.00 | 625.00 | 625.00 |
| " " la Marine | " | " | 20,000,000 | 500 | 30.00 | 800.00 | 800.00 |
| " " Longwy | " | " | ..... | 500 | 35.00 | 697.50 | 697.50 |
| " " l'Horme | " | " | ..... | 500 | ..... | 20.00 | 19.00 |
| Aguas Tenidas | Spain | Iron pyrites | 10,000,000 | 500 | 40.00 | 444.50 | 425.00 |
| Anzin | France | Coal | ..... | ..... | 200.00 | 4,040.00 | 4,040.00 |
| Boleo | Lower Cal. | Copper | ..... | 500 | ..... | 745.00 | 760.00 |
| Bruay | France | Coal | 3,000,000 | 400 | 600.00 | 14,000.00 | 14,200.00 |
| Callao | Venezuela | Gold | 3,200,000 | 125 | ..... | 13.75 | 13.50 |
| Cape Copper | S. Africa | Copper | ..... | 50 | 1.50 | 37.50 | 35.00 |
| Champ d'Or | " | Gold | ..... | 25 | ..... | 115.00 | 115.00 |
| Courrieres | France | Coal | 6 0,000 | 300 | 150.00 | 4,254.75 | 4,225.00 |
| De Beers Consolidated | S. Africa | Diamonds | 98,750,000 | 125 | 15.63 | 539.00 | 542.50 |
| Dombrowa | Russia | Coal | ..... | 500 | ..... | 540.00 | 565.00 |
| Dourges | France | " | ..... | 1,000 | 225.00 | 6,955.00 | 6,950.00 |
| Dynamite Centrale | " | Explosives | ..... | 500 | 25.00 | 642.50 | 660.00 |
| Dynamite Francaise | " | " | ..... | 500 | 25.00 | 590.00 | 605.00 |
| Epinac | " | Coal | ..... | 2,500 | ..... | 600.00 | 600.00 |
| Huanchaca | Bolivia | Silver | ..... | 125 | 5.00 | 160.00 | 160.00 |
| Jerez-Las Teira | Spain | Copper | ..... | ..... | ..... | 6.00 | 6.00 |
| Kebao | Tonquin | Coal | ..... | 500 | ..... | 642.00 | 642.00 |
| Laurium | Greece | Zinc & lead | 16,340,000 | 500 | 40.00 | 570.00 | 570.00 |
| Malfidano | Italy | Zinc | 1,500,000 | 500 | 52.50 | 990.00 | 985.00 |
| Metaux, Cie. Fran. de | France | Metal d'lers. | 2,000,000 | 500 | 37.50 | 231.50 | 222.50 |
| Mokta-el-Hadid | Algeria | Iron | 18,2 2,500 | 500 | 40.00 | 780.00 | 785.00 |
| Nickel | N. Caledonia | Nickel | 12,720,000 | 500 | 30.00 | 244.00 | 259.00 |
| Penarroya | Spain | Coal, etc. | ..... | 500 | 52.50 | 775.00 | 785.00 |
| Pontgibaud | France | Lead, etc. | ..... | ..... | ..... | 270.00 | 275.00 |
| Rio Tinto | Spain | Copper | 81,2 0,000 | 250 | 17.50 | 341.25 | 332.50 |
| Robinson | S. Africa | Gold | ..... | 125 | 12.50 | 232.50 | 237.00 |
| Saint Elie | Fr. Guiana | " | 4,000,000 | 25 | ..... | 35.00 | 35.00 |
| Salines de l'Est | France | Salt | ..... | 500 | 27.00 | 370.00 | 375.00 |
| Soufres Roumaines | Italy | Sulphur | ..... | ..... | ..... | 192.5 | 195.00 |
| Tharsis | Spain | Copper | ..... | 50 | 6.25 | 112.00 | 112.00 |
| Vicogne-Noeux | France | Coal | ..... | ..... | 700.00 | 17,350.00 | 17,300.00 |
| Vieille Montagne | Belgium | Zinc | 9,000,000 | 80 | 30.00 | 475.00 | 471.25 |

## CURRENT PRICES.

These quotations are for wholesale lots in New York unless otherwise specified.

**Acid**—Acetic, chem, pure .18@.20
Commercial, in bbls, and cbys .01¾@.02
Carbonic, liquefied, ℔ lb .07@.10
Chromic .20
Hydrofluoric .14@.17
**Alcohol**—95%, ℔ gall .$2.30@$2.40
Absolute .$3.80
**Alum**—Lump, ℔ cwt .$1.60@$1.80
Ground, ℔ cwt .$1.70@$1.90
Lump ℔ ton, Liverpool .£4 10s.@£4 17s.
**Aluminum Chloride**—Pure, ℔ lb .$1.25
Amalgamating solution, ℔ lb .60
Sulphate, ℔ cwt .$1.25@$1.75
**Ammonia**—Sal., lump, ℔ lb .09@.10
Carbonate, ℔ lb., English and German .08½@.09½
Muriate, white, in bbls., ℔ lb .07@.08
**Aqua Ammonia**—(in cbys) 2.8° ℔ lb .03@.04
20°, ℔ lb .04@.05
26°, ℔ lb .04½@.05
**Antimony**—Oxymur, ℔ lb .04@.06
Regulus, ℔ lb .07@.08
Oxide .18@.25
**Argols**—Red, powdered, ℔ lb .15
**Arsenic**—White, powdered ℔ lb .03@.03¼
Red ℔ lb .06½@.06
Yellow .08@.09
White at Plymouth, ℔ ton .£12 2 6
**Asbestos**—Canadian, ℔ ton .$15@$120
Italian, ℔ ton, c. i. f. L'pool .£18@£80
**Ashes**—Pot, 1st sorts, ℔ lb .04½@04½
Pearl .05½@.06
**Asphaltum**—
Prime Cuban, ℔ lb .04@.05
Hard Cuban, ℔ ton .$28.00@$30.00
Trinidad, refined, ℔ ton .$30.00@$35.00
Egyptian and Syrian, ℔ lb .05@.07½
Californian, at mine, ℔ ton $12.00@$26.00
at San Francisco, ℔ ton, $15.00@$29.00
**Barium**—Carbonate, pure precip., ℔ lb .10
Carbonate, commercial, ℔ lb .03
Chlorate, crystal, ℔ lb .2½@ 3)
Chloride, commercial, ℔ lb .(2@.02½
Iodide, ℔ oz .40
Nitrate, ℔ lb .06½@.07
Sulph., Am. prime white, ℔ ton .$15@$18
Sulph., foreign, floated, ℔ ton .$16@$18
Sulph., off color, ℔ ton .$10@$11.00
Carb., lump, f. o. b. L'pool, ℔ ton .£6
**Baurite**—℔ ton .$7 @ $8
**Bichromate of Potash**—Scotch, ℔ lb .09@.10
American, ℔ lb .09@.09½
**Bichromate of Soda**—℔ lb .08@.09
**Borax**—Refined, ℔ lb., in car lots .06@.06½
**Bromine**—℔ lb .25@.35
**Cadmium Minion**—℔ lb .$2.00
**Cadmium Iodide**—℔ lb .$5.00
**Chalk**—℔ ton .$1.50@$2.25
Precipitated, ℔ lb .04@.05
**China Clay**—English, ℔ ton .$12@$17.00
Domestic, ℔ ton .$9@$11
**Chlorine**, liquefied, ℔ lb .25
**Chrome Yellow**—℔ lb .10@.25
**Chrome Iron Ore**—℔ ton, San Francisco .$10.00
**Chromalum**—Commercial, ℔ lb .03@.05
**Cobalt**—Oxide, ℔ lb .$1.40@$1.55
**Copper**—Sulph. English Wks, ton £20@£21
Vitriol (blue), ℔ lb .03½@.04¼
Nitrate, ℔ lb .25
**Copperas**—Common, ℔ 100 lbs .50@.65
Best, ℔ 100 lbs .$1.25@$1.50
Liverpool, ℔ ton, in c'sks .£1 11s.@£1 15s.
**Corundum**—Powdered, ℔ lb .04¼@.09
Flour, ℔ lb .03
**Cryolite**—Pow., ℔ lb., bbl. lots .06½@.07¼
**Emery**—Grain, ℔ lb. (℔ kg.) .04½@.05
Flour, ℔ lb .02½@.04
**Epsom Salt**—℔ lb .01@.01½
**Feldspar**—Ground, ℔ ton .$6.00@$10.00
**Fluorspar**—Powdrd, No. 1, ℔ ton .$15@$20
Lump, at mine .$6@$8
**French Chalk**—℔ ton .$2.25@$2.30
**Fuller's Earth**—Lump, ℔ ton .$10@$20
**Glauber's Salt**—in bbls., ℔ cwt .50@ 75
**Glass**—Ground, ℔ lb .09@.10
**Gold**—Chloride, pure, crystals, ℔ oz. $12.00
pure, 15 gr., c. v., ℔ doz. $5.40
liquid, 15 gr., g. s. v., ℔ doz .$5.50
Chloride and sodium, ℔ oz .$6.00
15 gr., c. v., ℔ doz. $2.75
Oxide, ℔ oz .$27.25
**Gypsum**—Calcined, ℔ bbl .$1.75
**Iodine**—Resublimed, ℔ lb .$3.50@$3.60
**Iridium**—Oxide ℔ lb .$90
**Iron**—Nitrate, 40°, ℔ lb .01@.01¼
47°, ℔ lb .02@.02¼
**Kaolin**—*See China Clay.*
**Kieserite**—℔ ton .$9@$10
**Lead**—Red, American, ℔ lb .04½@.05
White, American, in oil, ℔ lb. .05½@.06¼
White, English, ℔ lb., in oil .06½@.07½
Acetate, or sugar of, white .06@.08
Nitrate .05¾@.06½
**Lime Acetate**—Am. Brown .90@.95
" Gray .$1.50@$1.60
**Litharge**—Powdered, ℔ lb .04½@.05½
English flake, ℔ lb .07½@.09¼
**Magnesite**—Crude, ℔ ton of 1,015 kilos .$7@$10
Calcined, ℔ ton of 2,240 lbs .$12@$14
Brick, ℔ ton of 2,240 lbs .$17.50
**Manganese**—Ore, per unit .23@.28
Oxide, ground, ℔ lb .02½@.06¼
**Mercuric Chloride**—(*Corrosive Sublimate*) ℔ lb .55@.60
**Marble Dust**—℔ bbl .85c.@$1
**Metallic Paint**—Brown ℔ ton .$25
Red .$20@$25
**Mica**—In sheets according to size, 1st quality, ℔ lb .$3.25@$6
Ordinary rock .02¼
**Nitre Cake**—℔ ton .$2.50@$3
**Ochre**—Rochelle, ℔ lb .01@.01½
Washed Nat Oxf'rd, Lump, ℔ lb. 0¼@.0
Washed Nat Oxf'rd, Pow., ℔ lb. 0¾@.0¼
Golden, ℔ lb .03@.
Domestic, ℔ ton .$8@$10
**Oils, Mineral**—
Cylinder, light filtered, ℔ gal .12@.20
Dark filtered, ℔ gal .10@.15
Extra cold test, ℔ gal .20@.24
Dark steam refined, ℔ gal .07½@.12
**Phosphorus**—℔ lb .50@.55
Precip., red, ℔ lb .75@.80
white, ℔ lb .80@.85
**Platinic Chloride**—Dry, ℔ oz .$6
**Plumbago**—Ceylon, ℔ lb .04@ 05
American or German, ℔ lb .02@.02½
**Potassium**—Cyanide, ℔ lb., C. P. 65%, ℔ lb .52@.40
mining .20@.22
Bromide, domestic, ℔ lb .24@.32
Chlorate, English, ℔ lb .10@.12
Chlorate, powdered, English, ℔ lb .12@.14
Carbonate, ℔ lb., by casks, 98-99% .06@.07
Caustic, ℔ lb., pure slick .04½@.06
Iodide, ℔ lb .$2.58@$2.80
Nitrate, refined, ℔ lb .05@.06
Bichromate, ℔ lb .09@.11
Yellow Prussiate, ℔ lb., 24c. contr., 25c. single casks. .39@.40
Red Prussiate, ℔ lb .39@.40
**Pumice Stone**—Select lumps, lb .03½@.15
Original cks., ℔ lb .01½@.02
Powdered, pure, ℔ lb .01½@.02
**Pyrites**—Non-cupreous, p. unit .10@.11
**Quartz**—Ground, ℔ ton .$6.00@$10.00
**Rotten Stone**, Powdered, ℔ lb .03¼@.03¼
Lump, ℔ lb .06@.07
Original cks, ℔ lb .04½@.05½
Rubbing stone, ℔ lb .03½@.04
**Salt**—Liverpool, ground, ℔ sack .70
Domestic, fine, ℔ ton .$7@$7.50
Common, fine, ℔ ton .$4.50@$5
Turk's Island, ℔ bush .28@
**Salt Cake**—℔ ton .$9@$15
**Saltpeter**—Crude, ℔ lb .04@.05
**Soapstone**—Ground, ℔ ton .$6@$8
Block and slab according to size.
**Sodium**—Prussiate, ℔ lb .22@.24
Phosphate, ℔ lb .04@.05
Stannate, ℔ lb .06@.12
Tungstate, ℔ lb .30@.35
Hyposulphite, ℔ cwt., in casks .$1.70@$1.80
**Strontium**—Nitrate, ℔ lb .08@.09
**Sulphur**—Roll, ℔ lb .01½@ 01¾
Flour, ℔ lb .01¼@ 01¾
**Sylvinit, 27@35%, per unit** .36½@.37½
**Talc**—Ground French, ℔ lb .01¼@ 01½
American No. 1, ℔ lb .01@.01½
American No. 2 .006@.008
**Terra Alba**—French, ℔ cwt .50@ 80
English .70@.80
Domestic, ℔ ton .$8.50@$10
**Tin**—Crystals, in kegs or bbls .14@.15
feathered or flossed .20
Muriate, single .07@.12
Double or strong, 54° B .10@.15
Oxymur, or nitro .19
**Vermilion**—Imp. English, ℔ lb .64@ 66
Am. quicksilver, bulk .59@ 62
Am. quicksilver, bags .60@.64
Chinese .85@$1.00
Trieste .90@.95
American .11½@.12
**Zinc White**—Am., Dry, ℔ lb .03¼@.04½
Antwerp, Red Seal, ℔ lb .05½@.05¾
Paris, Red Seal, ℔ lb .06¾@.07
Muriate solution .12
Sulphate crystals in bbls., ℔ lb .03@.03¼

### THE RARER METALS.

The prices given below are the prices in Germany, and are per gramme except where otherwise stated:

**Arsenic** (metallic), per kilo .$0.25
**Barium** (ex amalgam) .2.12
" (per electrol.) .7.75
**Bismuth** (metallic), per kilo .6.25
**Cadmium** (metallic), " .2.75
**Calcium** (per electrol.) .5.25
**Cerium** (pulv.) .2.25
" (fusum in globulis) .5.50
**Chromium** (fus.) .40
" (cryst.) .75
**Cobalt** (metallic), per kilo .10.00
" (pure), per kilo .40.00
**Didymium** (pulv.) .5.50
**Erbium-Yttrium** (oxydat.) .10.00
**Gallium** (cryst.) .100.00
**Germanium** (fus.) .37.50
(pulv.) .35.00
**Glucinum** (pulv.) .7.00
" (cryst) .10.75
**Indium** .5.00
**Iridium** (fusum) .1.25
**Lanthanum** (pulv.) .6.00
" (per electrol.) .11.00
**Lithium** (in glob.) .5.00
" (wire) .6.25
**Manganese** fusum) .25
**Molybdenum** (pulv.) .12½
**Niobium** (pulv.) .4.25
**Osmium** .1.00
**Palladium** (wire) .06
" (pulv.) .1.00
**Potassium** (metal), per kilo .27.50
**Rhodium** .1.63
**Ruthenium** .2.50
**Rubidium** .6.25
**Selenium** (cryst.) .50
" (precipitates) .62½
**Strontium** (per electrol.) .7.25
" (ox amalgam) .3.25
**Tantalum** .4.75
**Tellurium** (fusum) .50
" (precipitates) .22½
**Thallium** .03¾
**Titanium** .1.13
**Tungsten (pure)** .05
**Uranium** .1.00
**Vanadium** .1.00

## DIVIDEND-PAYING MINES.

| | Name and Location of Company. | | Capital Stock. | Shares. No. | Par val. | Assessments. Total Levied | Assessments. Date and amount of last. | | | Dividends. Total paid. | Dividends. Date & amount of last. | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Adams, s. L. | Colo.. | $1.500,000 | 150,000 | $10 | * | ..... | ..... | ..... | $687.500 | Jan.. | 1892 | 05 |
| 2 | Alaska-Treadwell, g. | Al'ska | 5,000,000 | 200,000 | 25 | ..... | ..... | ..... | ..... | 2,224.000 | Apr.. | 1895 | .37½ |
| 3 | Alice, s. | Mont. | 10,000,000 | 400,000 | 25 | * | ..... | ..... | ..... | 975,000 | Nov.. | 1891 | .06¼ |
| 4 | Amador, G. | Cal. | 1,250,000 | 250,000 | 5 | * | ..... | ..... | ..... | 225,000 | Mar.. | 1892 | .05 |
| 5 | American, G. | Colo.. | 3,000,000 | 300,000 | 10 | * | ..... | ..... | ..... | 50,000 | Apr.. | 1891 | .12½ |
| 6 | American Belle, S. G. C. | Colo. | 2,000,000 | 400,000 | 5 | * | ..... | ..... | ..... | 175,000 | Mar.. | 1892 | .05 |
| 7 | Americ'n & Nettie, G. S. | Colo.. | ..... | 300,000 | ..... | ..... | ..... | ..... | ..... | 700,000 | Feb.. | 1891 | 1.00 |
| 8 | Atlantic, C. | Mich. | 1,000,000 | 40,000 | 25 | 280,000 | April | 1875 | $1.00 | 20,000 | Mar. | 1892 | .01 |
| 9 | Argyle, G. | Colo.. | 1,000,000 | 1,000,000 | 1 | * | ..... | ..... | ..... | 900,000 | July. | 1894 | .10 |
| 10 | Aspen Mg. & S., S. L. | Colo.. | 2,000,000 | 200,000 | 10 | * | ..... | ..... | ..... | 650,000 | Feb.. | 1893 | 2.00 |
| 11 | Aurora, I. | Mich.. | 2,500,000 | 100,000 | 25 | ..... | ..... | ..... | ..... | 97,500 | Mar. | 1890 | .25 |
| 12 | Badger, S. | Ont... | 250,000 | 50,000 | 5 | ..... | ..... | ..... | ..... | 382,000 | Jan. | 1895 | .05 |
| 13 | Bald Butte | Mont. | 250,000 | 250,000 | 1 | * | ..... | ..... | ..... | 77,510 | Apr.. | 1895 | .02 |
| 14 | Bangkok-C, Bell, S.L. | Colo.. | 600,000 | 600,000 | 1 | ..... | ..... | ..... | ..... | 67,500 | Dec.. | 1891 | .00¾ |
| 15 | Bates Hunter, S. & ... | Colo. | 1,000,000 | 1,000,000 | 1 | ..... | ..... | ..... | ..... | 135,113 | Mar.. | 1895 | .04 |
| 16 | Belden, F. E., m. | N. H. | 500,000 | 100,000 | 5 | * | ..... | ..... | ..... | 300,000 | Dec.. | 1879 | .25 |
| 17 | Belle Isle, S. | Nev.. | 10,000,000 | 100,000 | 100 | 250,271 | Sept | 1893 | .10 | 15,397,200 | Apr.. | 1876 | 1.00 |
| 18 | Belcher, S. G. | Nev.. | 10,400,000 | 104,000 | 100 | 3,262,900 | Nov. | 1892 | .20 | 200,000 | Jan.. | 1890 | .10 |
| 19 | Bellevue, Idaho, S. L. | Idaho | 1,250,000 | 125,000 | 10 | 120,000 | Dec.. | 1889 | .25 | 90,000 | Feb.. | 1892 | .01 |
| 20 | Best Friend | Colo. | 1,000,000 | 1,000,000 | 1 | * | ..... | ..... | ..... | 1,630,000 | June | 1893 | .10 |
| 21 | Bi-Metallic, S. G. | Mont. | 5,000,000 | 200,000 | 25 | ..... | ..... | ..... | ..... | 1,677,572 | Dec.. | 1894 | .25 |
| 22 | Bodie Con., G. I. | Cal.. | 10,000,000 | 100,000 | 100 | 714,990 | July | 1893 | .15 | 520,000 | June | 1886 | .15 |
| 23 | Boston & Mont., G. | Mont. | 2,500,000 | 250,000 | 10 | * | ..... | ..... | ..... | 2,325,000 | Nov.. | 1894 | 1.00 |
| 24 | Boston & Mont., C. S. | Mont. | 3,? 0,000 | 80,000 | 25 | * | ..... | ..... | ..... | 120,000 | Mar.. | 1893 | .50 |
| 25 | Brotherton, I. | Mich. | 2,00,000 | 100,000 | 10 | ..... | ..... | ..... | ..... | 190,000 | Oct.. | 1892 | .05-6 |
| 26 | Bulwer, G. | Cal.. | 10,000,000 | 300,000 | 10 | 155,000 | July | 1893 | .15 | 150,000 | Oct.. | 1888 | .06 |
| 27 | Bunker Hill & S. L. | Idaho | 3,000,000 | 300,000 | 10 | * | ..... | ..... | ..... | 192,000 | Oct.. | 1890 | .08¾ |
| 28 | Caledonia, G. | Dak.. | 1,000,000 | 100,000 | 10 | 305,000 | May | 1885 | .15 | 41,350,000 | Dec.. | 1894 | 5.00 |
| 29 | Calumet & Hecla C., | Mich.. | 2,500,000 | 100,000 | 25 | 1,300,000 | ..... | ..... | ..... | 1,950,000 | Apr.. | 1895 | .50 |
| 30 | Centen'l-Eureka, S. L. | Utah. | 1,500,000 | 30,000 | 50 | 30,000 | Mar. | 1888 | 1.00 | 1,970,000 | Feb.. | 1891 | 1.00 |
| 31 | Central, C. | Mich.. | 500,000 | 20,000 | 25 | 100,000 | Oct.. | 1861 | .65 | 198,600 | Feb.. | 1895 | .10 |
| 32 | Champion, G | Cali.. | 340,000 | 34,000 | 10 | 150,000 | ..... | ..... | ..... | 1,650,000 | Dec.. | 1884 | .25 |
| 33 | Chrysolite, S. L. | Colo.. | 10,000,000 | 200,000 | 50 | * | ..... | ..... | ..... | 340,000 | June | 1893 | .06 |
| 34 | Cœur D'Alene, S. L. | Idaho | 5,000,000 | 500,000 | 10 | ..... | ..... | ..... | ..... | 502,661 | Apr.. | 1893 | .05 |
| 35 | Colorado Central, S. L. | Colo.. | 2,750,000 | 275,000 | 10 | ..... | ..... | ..... | ..... | 20,000 | Nov.. | 1890 | .20 |
| 36 | Commonwealth, S. | Nev.. | 10,000,000 | 100,000 | 100 | 260,000 | Nov. | 1893 | .10 | 277,680 | Apr.. | 1889 | 1.00 |
| 37 | Confidence, S. L. | Nev... | 2,496,000 | 24,960 | 100 | 1,389,550 | Aug.. | 1892 | .50 | 3,952,800 | Mar | 1895 | .25 |
| 38 | ‡Cons. Cal. & Va., S. G | Nev... | 21,600,000 | 216,000 | 100 | 216,000 | Dec.. | 1892 | .50 | 2,635,500 | Aug. | 1892 | .20 |
| 39 | Contention, S. | Ariz. | 12,500,000 | 250,000 | 50 | ..... | ..... | ..... | ..... | 119,532 | Nov. | 1892 | .05 |
| 40 | Cook's Peak, S. | N. M.. | 2,000,000 | 200,000 | 10 | ..... | ..... | ..... | ..... | 1,810,000 | Feb.. | 1895 | .25 |
| 41 | ‡Cop. Queen Con., G. | Ariz.. | 2,000,000 | 200,000 | 10 | ..... | ..... | ..... | ..... | 68,000 | Feb.. | 1895 | .01 |
| 42 | Coptis | Nev. | 10,000,000 | 100,000 | 100 | ..... | ..... | ..... | ..... | 735,000 | Feb.. | 1893 | .15 |
| 43 | Cortes, S. | Nev. | 1,500,000 | 300,000 | 5 | * | ..... | ..... | ..... | 238,000 | Oct.. | 1888 | .03 |
| 44 | Crescent, S. L. G. | Utah. | 15,000,000 | 600,000 | 25 | 60,000 | Oct. | 992 | .10 | 11,898,000 | Jan.. | 1875 | .00 |
| 45 | Crown Point, G. S. | Nev... | 10,000,000 | 100,000 | 100 | 2,750,000 | June | 1893 | .25 | 2,850,000 | May.. | 1893 | .25 |
| 46 | Daly, S. L. | Utah. | 3,000,000 | 150,000 | 20 | ..... | ..... | ..... | ..... | 1,140,000 | Sept. | 1892 | 05 |
| 47 | +Deadwood-Terra, G. | Dak.. | 5,000,000 | 200,000 | 25 | * | ..... | ..... | ..... | 1,372,000 | Jan .. | 1895 | .25 |
| 48 | DeLamar, G. S. | Idaho | 2,000,000 | 400,000 | 5 | ..... | ..... | ..... | ..... | 260,000 | Mar.. | 1891 | .05 |
| 49 | Derbec B. Grav., G. | Cal... | 10,?00,000 | 100,000 | 100 | 100,000 | Sept. | 1892 | .10 | 245,000 | July | 1893 | .25 |
| 50 | Dexter, G. S. | Nev.. | 1,000,000 | 100,000 | 10 | ..... | ..... | ..... | ..... | 1,299,689 | Dec | 1894 | 18 |
| 51 | Elkhorn, S. | Mont. | 1,000,000 | 200,000 | 5 | * | ..... | ..... | ..... | 60,000 | Dec. | 1894 | .01 |
| 52 | Elkton | Colo. | 5.0,000 | 500,000 | 1 | ..... | ..... | ..... | ..... | 850,000 | June. | 1893 | .25 |
| 53 | Enterprise, S. | Colo.. | 2,500,000 | 500,000 | 5 | * | ..... | ..... | ..... | 5,112,500 | Jan.. | 1892 | .25 |
| 54 | Eureka Con., S. L. G. | Nev... | 1,000,000 | 50,000 | 20 | 550,000 | June | 1889 | .50 | 1,437,500 | Dec.. | 1889 | .25 |
| 55 | Evening Star, S. L. | Colo.. | 500,000 | 50,000 | 10 | * | ..... | ..... | ..... | 1,125,000 | Dec.. | 1885 | .20 |
| 56 | Father de Smet, G. | Dak.. | 10,000,000 | 100,000 | 100 | 900,000 | Nov.. | 1878 | .05 | 1,240,000 | Jan. | 1894 | 2.00 |
| 57 | Franklin, C. | Mich.. | 1,000,000 | 40,000 | 25 | 330,000 | June | 1867 | 2.50 | 10,000 | June. | 1891 | 10 |
| 58 | Glengarry | Mont. | 1,000,000 | 100,000 | 10 | ..... | ..... | ..... | ..... | 9,375 | Mar.. | 1895 | .00¼ |
| 59 | Gold & Globe, G. | Colo.. | 750,000 | 750,000 | 1 | * | ..... | ..... | ..... | 3,826,800 | Oct.. | 1870 | 10.00 |
| 60 | Gould & Curry, S. G. | Nev... | 10,800,000 | 108,000 | 100 | 4,698,400 | Oct . | 1893 | .10 | 495,000 | Mar. | 1884 | .25 |
| 61 | Grand Prize, S. | Nev... | 10,000,000 | 100,000 | 100 | 785,000 | Jan.. | 1890 | .50 | 12,120,000 | July. | 1892 | .20 |
| 62 | Granite Mountain, S. | Mont. | 10,000,000 | 400,000 | 25 | ..... | ..... | ..... | ..... | 988,366 | Nov. | 1893 | .25 |
| 63 | Great Western, L. G. | Cal... | 5,000,000 | 50,000 | 100 | 50,526 | ..... | 1889 | .15 | 1,822,000 | Aug. | 1888 | .50 |
| 64 | Hale & Norcross, G. S. | Nev... | 11,280,000 | 112,000 | 100 | 5,646,000 | June | 1893 | .50 | 2,055,000 | Mar.. | 1895 | .50 |
| 65 | Hecla Con., S. G. L. C. | Mont. | 1,500,000 | 30,000 | 50 | * | ..... | ..... | ..... | 197,970 | July. | 1886 | .06 |
| 66 | Hel'a Mg. & Red, S. L. G. | Mont. | 3,315,000 | 663,000 | 5 | * | ..... | ..... | ..... | 280,000 | Feb.. | 1892 | .02 |
| 67 | Helena & Frisco, S. L. | Idaho | 2,500,000 | 500,000 | 5 | ..... | ..... | ..... | ..... | 80,000 | May. | 1892 | .05 |
| 68 | Helena & Victor | Mont. | 1,000,000 | 200,000 | 5 | ..... | ..... | ..... | ..... | 75,000 | Apr. | 1892 | .25 |
| 69 | ¶Holmes, S. | Nev... | 10,000,000 | 100,000 | 100 | 345,000 | Mar. | 1890 | .25 | 5,?29,000 | Apr.. | 1895 | .25 |
| 70 | Homestake, G. | Dak.. | 12,500,000 | 125,000 | 100 | 200,000 | July. | 1878 | 1.00 | 603,250 | Jan | 1895 | .10 |
| 71 | Hope, S. | Mont. | 1,000,000 | 100,000 | 10 | * | ..... | ..... | ..... | 5,135,500 | Apr.. | 1895 | .12½ |
| 72 | Horn-Silver, S. L. | Utah. | 10,000,000 | 400,000 | 25 | * | ..... | ..... | ..... | 5,489,000 | Sept. | 1893 | 2.50 |
| 73 | Idaho, G. | Cal... | $10,000 | 3,100 | 100 | ..... | ..... | ..... | ..... | 45,000 | Apr.. | 1889 | .20 |
| 74 | Illinois, S. | N. M.. | 100,000 | 100,000 | 1 | * | ..... | ..... | ..... | 305,000 | Jan.. | 1895 | .02 |
| 75 | Iron Mountain, S. | Mont. | 5,000,000 | 500,000 | 10 | * | ..... | ..... | ..... | 2,500,000 | Apr.. | 1888 | .20 |
| 76 | Iron-Silver, S. L. | Colo.. | 10,000,000 | 500,000 | 20 | * | ..... | ..... | ..... | 83,000 | Feb. | 1885 | .14 |
| 77 | Jackson, G. S. | Nev.. | 5,000,000 | 50,000 | 100 | 247,500 | Mar.. | 1893 | .20 | 90,000 | Jan. | 1890 | 2.00 |
| 78 | Kearsarge, C. | Mich.. | 1,000,000 | 40,000 | 25 | 190,000 | Oct.. | 1887 | 1.00 | 1,506,000 | Feb.. | 1895 | .48 |
| 79 | Kennedy | Cal... | 10,000,000 | 100,000 | 100 | * | ..... | ..... | ..... | 316,000 | Feb.. | 1893 | .03 |
| 80 | Leadville Con., S. L. | Colo.. | 4,000,000 | 400,000 | 10 | * | ..... | ..... | ..... | 652,200 | July. | 1893 | .90 |
| 81 | Lexington, G. S. | Mont. | 4,000,000 | 40,000 | 100 | * | ..... | ..... | ..... | 820,000 | Dec. | 1890 | .05 |
| 82 | Little Chief, S. L. | Colo.. | 10,000,000 | 200,000 | 50 | ..... | ..... | ..... | ..... | 708,500 | Apr.. | 1893 | .25 |
| 83 | Maid of Erin | Colo.. | 3,000,000 | 600,000 | 5 | ..... | ..... | ..... | ..... | 1,040,000 | Dec.. | 1891 | .10 |
| 84 | Mammoth, S. L. C. | Utah | 10,000,000 | 400,000 | 250 | 110,000 | ..... | 1882 | .25 | 117.000 | Apr.. | 1892 | .03 |
| 85 | Maxfield | Utah. | 3,000,000 | 300,000 | 10 | ..... | ..... | ..... | ..... | 224,000 | Mar.. | 1895 | .10 |
| 86 | Mayflower, D. gravel | Cal... | 1,200,000 | 60,000 | 20 | * | ..... | ..... | ..... | 360,000 | Dec.. | 1890 | .50 |
| 87 | Minas Prietas, G. S. | Mex.. | 1,000,000 | 100,000 | 10 | ..... | ..... | ..... | ..... | 1,820,000 | Mar.. | 1876 | ..... |
| 88 | Minnesota, C. | Mich.. | 1,000,000 | 40,000 | 25 | 420,000 | April | 1886 | 1.00 | 2,745,000 | Apr.. | 1893 | 1 50 |
| 89 | Minnesota Iron, I. | Minn. | 16,500,000 | 165,000 | 100 | ..... | ..... | ..... | ..... | 4,089,000 | Jan.. | 1895 | .05 |
| 90 | Mollie Gibson, S. | Colo.. | 5 000,000 | 1,000,000 | 5 | 19 500 | Jan.. | 1891 | .01 | 45,000 | Oct.. | 1890 | .03 |
| 91 | Monitor, G. | S. Dak | 2,500,000 | 250,000 | 10 | ..... | ..... | ..... | ..... | 12,500 | Mar | 1886 | .25 |
| 92 | Mono, G. | Cal... | 5,000,000 | 50,000 | 100 | 797,500 | Feb.. | 1893 | .25 | 2,701,575 | Jan. | 1895 | 12½ |
| 93 | Montana, Lt., G. S. | Mont. | 3,300,000 | 660,000 | 5 | * | ..... | ..... | ..... | 72,000 | Nov.. | 1894 | .02 |
| 94 | Moose | Colo. | 600,000 | 600,000 | 1 | ..... | ..... | ..... | ..... | 1,025,000 | Dec.. | 1891 | .25 |
| 95 | Morning Star, S. L. | Colo.. | 1,000,000 | 100,000 | 10 | ..... | ..... | ..... | ..... | 328,300 | Mar.. | 1895 | .00 |
| 96 | Morning Star Drift, G | Cal... | 240,000 | 2,400 | 100 | ..... | ..... | ..... | ..... | 430,000 | Feb.. | 1894 | .15 |
| 97 | Moulton, S. G. | Mont. | 2,000,000 | 400,000 | 5 | * | ..... | ..... | ..... | 225,000 | Nov.. | 1893 | .30 |
| 98 | Mt. Diablo, S. | Nev. | 5,000,000 | 50,000 | 100 | 137,500 | June | 1880 | 2.00 | 10,000 | Jan.. | 1895 | .10 |
| 99 | Mt. Rosa, G | Colo. | 1,00 ,000 | 1,000,000 | 1 | ..... | ..... | ..... | ..... | 680,000 | Apr.. | 1895 | .20 |
| 100 | Napa, G. | Cal... | 700,000 | 700,000 | 7 | ..... | ..... | ..... | ..... | 226,111 | Apr.. | 1889 | .10 |
| 101 | Navajo, G. S. | Nev.. | 10,000,000 | 100,000 | 100 | 538,714 | Sept. | 1893 | .10 | 1,877,500 | Apr.. | 1892 | .75 |
| 102 | New Guston, S. | Colo.. | 550,000 | 110,000 | 5 | ..... | ..... | ..... | ..... | 20,000 | July.. | 1891 | .05 |
| 103 | North Banner Con. | Cal... | 1,000,000 | 100,000 | 10 | ..... | ..... | ..... | ..... | 25,000 | June. | 1891 | .25 |
| 104 | North Commonw'th | Nev.. | 10,000,000 | 100,000 | 10 | 90,000 | Jan.. | 1893 | .10 | 30,000 | Dec.. | 1885 | .06¼ |
| 105 | N. Hoover Hill, G. S. | N. C. | 300,000 | 120,000 | 2½ | * | ..... | ..... | ..... | 230,000 | May. | 1888 | .50 |
| 106 | North Belle Isle, S. | Nev.. | 10,000,000 | 100,000 | 100 | 513,075 | April | 1893 | .10 | 450,000 | June | 1893 | .50 |
| 107 | North Star, G. | Cal... | 1,?00,000 | 100,000 | 10 | 20,000 | ..... | 1885 | .02 | 10,000 | Jan.. | 1895 | .00½ |
| 108 | Nugget, G. | ..... | 1,000,000 | 1,000,000 | 1 | * | ..... | ..... | ..... | 97,200 | July.. | 1894 | .15 |
| 109 | Omaha Cons., G. | Cal... | 2,400,000 | 24,000 | 100 | ..... | ..... | ..... | ..... | 13,175,000 | Oct.. | 1892 | .50 |
| 110 | Ontario, S. L. | Utah | 15,000,000 | 150,000 | 100 | ..... | ..... | ..... | ..... | 1,595,800 | Jan | 1880 | 1.00 |
| 111 | Ophir, G. S. | Nev.. | 10,000,000 | 100,000 | 100 | 4,391,040 | July. | 1893 | .25 | 1,897,500 | Jan.. | 1895 | 1.00 |
| 112 | Osceola, C. | Mich.. | ?,250,000 | 50,000 | 25 | 480,000 | April | 1876 | 1.60 | 422,500 | July. | 1893 | 1.00 |
| 113 | Pacific Coast, S. | Cal... | 2,000,000 | 20,000 | 100 | ..... | ..... | ..... | ..... | 1,569,000 | June | 1893 | .10 |
| 114 | Parrot, C. | Mont. | 2,?30,000 | 230,000 | 10 | ..... | ..... | ..... | ..... | 17,500 | July.. | 1891 | .75 |
| 115 | Petro | Utah. | 10,000,000 | 10,025 | 100 | ..... | ..... | ..... | ..... | 2,696,295 | Oct.. | 1893 | .18 |
| 116 | Pharmacist, G. | Cal... | 1,406,2?0 | 140,600 | 50 | ..... | ..... | ..... | ..... | 80,000 | June, | 1893 | .01 |
| 117 | Piumas Eureka, G. | Colo.. | 1,?00,000 | 1,?00,000 | 1 | ..... | ..... | ..... | ..... | 2,280,000 | Feb. | 1888 | .40 |
| 118 | Plymouth Con, G. | Cal... | 5,000,000 | 100,000 | 50 | * | ..... | ..... | ..... | 68,?60 | Sept. | 1892 | .15 |
| 119 | Poorman; G. S. | Idaho | 375,000 | 300,000 | 125 | * | ..... | ..... | ..... | 135,000 | Mar.. | 1895 | .01 |
| 120 | Portland, G. | Colo.. | 3,000,000 | 3,000,000 | 1 | ..... | ..... | ..... | ..... | 1,823,911 | June | 1891 | 1.25 |
| 121 | Quicksilver, pref., Q. | Cal... | 4,300,000 | 43,000 | 100 | ..... | ..... | ..... | ..... | 643,867 | July. | 1882 | .40 |
| 122 | " com., Q | Cal... | 5,700,000 | 57,000 | 100 | ..... | ..... | ..... | ..... | 7,470,000 | Feb.. | 1895 | 4.00 |
| 123 | Quincy, C. | Mich.. | 1,250,000 | 50,000 | 25 | 200,000 | Dec.. | 1862 | ..... | 153,000 | Dec. | 1892 | .10 |
| 124 | Red Cloud | Idaho | 1.000,000 | 200,000 | 5 | ..... | ..... | ..... | ..... | 20,000 | Aug. | 1891 | .03 |
| 125 | Retriever, L. | S. Dak | 1,250,000 | 250,000 | 5 | ..... | ..... | ..... | ..... | 50,250 | Apr.. | 1892 | .01½ |
| 126 | Rialto, G. | Colo.. | 300,000 | 300,000 | 1 | * | ..... | ..... | ..... | 4,386,780 | Sept. | 1893 | .25 |
| 127 | Richmond, S. L. | Nev.. | 1,350,000 | 54,000 | 25 | * | ..... | ..... | ..... | 325,000 | Nov.. | 1894 | .02½ |
| 128 | Rico-Aspen | Colo.. | 5,000,000 | 1,000,000 | 5 | ..... | ..... | ..... | ..... | 99,785 | Feb.. | 1886 | .50 |
| 129 | Ridge, C. | Mich.. | 1,250,000 | 50,000 | 25 | 219,939 | Mar. | 1886 | 50 | 585,000 | Mar. | 1886 | .05 |
| 130 | Robinson Con., S. L. | Colo.. | 10,000,000 | 200,000 | 50 | * | ..... | ..... | ..... | 4,460,000 | June | 1869 | 3.00 |
| 131 | Savage, S. | Nev.. | 11,200,000 | 112,000 | 100 | 6,966,000 | June | 1893 | .25 | 1,559,538 | Oct.. | 1893 | .12½ |
| 132 | Sierra Buttes, G. | Cal... | 2,?25,000 | 122,500 | 10 | ..... | ..... | ..... | ..... | 102,000 | Jan.. | 1871 | 1.00 |
| 133 | Sierra Nevada, S. G. | Nev.. | 10,000,000 | 100,000 | 100 | 6,321,910 | Aug. | 1893 | .30 | 270,000 | Apr.. | 1889 | .10 |
| 134 | Silver Cord, S. L. G. | Colo.. | 5,000,000 | 500,000 | 10 | ..... | ..... | ..... | ..... | 1,950,000 | July | 1887 | .25 |
| 135 | Silver King, S. | Ariz.. | 10,000,000 | 100,000 | 100 | 97,479 | Aug. | 1892 | .25 | 300,000 | Dec. | 1891 | 4.05 |
| 136 | Silver Mg. of L. V., S. L. | N. M.. | 500,000 | 500,000 | 1 | ..... | ..... | ..... | ..... | 3,225,000 | Oct.. | 1895 | .10 |
| 137 | Small Hopes Con., S. | Colo.. | 5,000,000 | 250,000 | 20 | * | ..... | ..... | ..... | 3,761,159 | Mar.. | 1895 | .10 |
| 138 | Standard, G. S. | Cal... | 10,000,000 | 100,000 | 100 | 100,000 | June | 1890 | .50 | 39,000 | Sept. | 1892 | .10 |
| 139 | Swansea, G. S. | Colo.. | 600,000 | 60,000 | 10 | ..... | ..... | ..... | ..... | 4,070,000 | Dec. | 1894 | 4.00 |
| 140 | Tamarack, C. | Mich.. | 1,250,000 | 50,000 | 25 | 520,000 | April | 1885 | 3.00 | 37,500 | Apr.. | 1894 | .00½ |
| 141 | Trinity Riv'r Hydr., G | Colo.. | 500,000 | 500,000 | 1 | * | ..... | ..... | ..... | 26,520 | Dec.. | 1894 | .00½ |
| 142 | Union | Colo.. | 1,?50,000 | 1,?50,000 | 1 | ..... | ..... | ..... | ..... | 562,500 | Dec.. | 1893 | .25 |
| 143 | United Verde, C. | Ariz.. | 3,000,000 | 300,000 | 10 | * | ..... | ..... | ..... | 265,000 | Feb. | 1895 | .05 |
| 144 | Victor, G. | Colo.. | 1,000,000 | 200,000 | 5 | ..... | ..... | ..... | ..... | 20,000 | Dec.. | 1891 | .05 |
| 145 | Ward Con., S. | Colo.. | 2,000,000 | 200,000 | 10 | ..... | ..... | ..... | ..... | 96,000 | Jan.. | 1895 | .10 |
| 146 | W. Y. O. D. | Cal... | 60,000 | 30,000 | 2 | 22,500 | May. | 1891 | .10 | 520,000 | July. | 1891 | .25 |
| 147 | Yankee Girl, ‡ | Colo. | 1,300,000 | 260,000 | 5 | ..... | ..... | ..... | ..... | 2,184,000 | Aug.. | 1871 | 1.50 |
| 148 | Yellow Jacket, G | Nev. | 12,000,000 | 120,000 | 100 | 550,000 | July. | 1893 | .25 | | | | |

## NON-DIVIDEND-PAYING MINES

| | Name and Location of Company. | | Capital Stock. | Shares. No. | Par | Assessments. Total levied. | Assessments. Date and am't of last. | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Alliance, S. G. | Utah. | $100,000 | 100,000 | $1 | $120,000 | Feb.. | 1891 | .10 |
| 2 | Alloues, C. | Mich. | 2,000,000 | 80,000 | 25 | 1,424,937 | Oct.. | 1891 | .10 |
| 3 | Alpha Con., G. S. | Nev.. | 3,000,000 | 30,000 | 100 | 209.000 | Sept. | 1892 | .10 |
| 4 | Alta, S. | Nev.. | 10,080,000 | 100,800 | 100 | 3,369,880 | Jan. | 1892 | .05 |
| 5 | American Flag, S. | Colo.. | 1,250,000 | 125,000 | 1 | 300,000 | June | 1887 | .. |
| 6 | Anchor, S. L. G. | Utah. | 3,000,000 | 150,000 | 5 | 560,000 | July. | 1893 | .?5 |
| 7 | Barcelona, G. | Nev.. | 5,000,000 | 200,000 | 5 | * | ..... | ..... | ..... |
| 8 | Belmont, G. | Cal... | 500,000 | 500,000 | 100 | * | ..... | ..... | ..... |
| 9 | Belmont, S. | Nev.. | 5,000,000 | 50,000 | 100 | 735,000 | April | 1886 | .10 |
| 10 | Best & Belcher, S. G. | Nev.. | 10,080,000 | 100,800 | 10 | 2,405,275 | Aug.. | 1892 | .25 |
| 11 | Black Oak, G. | Cal... | 3,000,000 | 300,000 | 100 | * | ..... | ..... | ..... |
| 12 | Brownlow, G. | Colo.. | 250,000 | 250,000 | 5 | ..... | ..... | ..... | ..... |
| 13 | Brunswick, G. | Cal... | 2,000,000 | 400,000 | 2 | ..... | ..... | ..... | ..... |
| 14 | Bullion, S. G. | Nev. | 10,000,000 | 100,000 | 100 | 2,890,000 | Aug. | 1892 | .25 |
| 15 | Butte & Boston, C. S. | Mont. | 5,000,000 | 200,000 | 10 | ..... | ..... | ..... | ..... |
| 16 | Butte Queen, G | Cal... | 1,000,000 | 100,000 | 1 | 6,000 | Jan.. | 1892 | ..... |
| 17 | Calaveras, G. | Cal... | 500.000 | 500,000 | 5 | ..... | ..... | ..... | ..... |
| 18 | Calaveras Con., G. | Cal... | 800,000 | 160,000 | 10 | ..... | ..... | ..... | ..... |
| 19 | California, G. | Cal... | 1,000.000 | 100,000 | 5 | 9,000 | Mar.. | 1892 | ..... |
| 20 | California Con. I. Q. | Cal... | 2,250,000 | 450,000 | 10 | ..... | ..... | ..... | ..... |
| 21 | Challenge Con., G. S. | Nev.. | 5,000,000 | 50,000 | 10 | ..... | ..... | ..... | ..... |
| 22 | Chollar, S. G. | Nev | 11,200,000 | 112,000 | 2 | 1,826,000 | May.. | 1892 | .50 |
| 23 | Colchis, S. G. | N. M.. | 500,000 | 150,000 | 5 | ..... | ..... | ..... | ..... |
| 24 | Colorado, S. | Colo.. | 1,625.000 | 325,000 | 1 | ..... | ..... | ..... | ..... |
| 25 | Comstock, S. | Utah. | 1,250,000 | 250,000 | 100 | ..... | ..... | ..... | ..... |
| 26 | Comstock Tun. | Nev.. | 10,000,000 | 100,000 | 100 | 35,000 | Mar.. | 1887 | .10 |
| 27 | Con. Imperial, G. S | Nev.. | 5,000,000 | 50,000 | 50 | 2,062,500 | Jan.. | 1892 | .25 |
| 28 | Con. New York, S. G. | Nev.. | 5,000,000 | 100,000 | 100 | 110,000 | Mar.. | 1892 | .10 |
| 29 | Con. Pacific, G. | Cal... | 6,000,000 | 60,000 | 10 | 198,000 | June | 1890 | .10 |
| 30 | Crescent, S. L. | Colo.. | 3,000,000 | 300,000 | 100 | * | ..... | ..... | ..... |
| 31 | Crocker, S. | Ariz.. | 10,000,000 | 100,000 | 1 | 165,000 | Aug. | 1892 | .05 |
| 32 | Crowell, G. | N. C.. | 500,000 | 500,000 | 1 | ..... | ..... | ..... | ..... |
| 33 | Dahlonega, G. | Ga.... | 250,000 | 250,000 | 10 | * | ..... | ..... | ..... |
| 34 | Decatur, S. | Colo.. | 1,500,000 | 300,000 | ..... | ..... | ..... | ..... | ..... |
| 35 | Denver City S. | Colo.. | 5,000,000 | 500,000 | 11 | * | ..... | ..... | ..... |
| 36 | Denver Gold, G. | Colo.. | 300,000 | 60,000 | 5 | ..... | ..... | ..... | ..... |
| 37 | Dickens-Custer, S. | Idaho | 2,100,000 | 420,000 | 5 | ..... | ..... | ..... | ..... |
| 38 | Durango, G. | Colo.. | 500,000 | 500,000 | 1 | * | ..... | ..... | ..... |
| 39 | El Dorado, G. | Cal... | 1,000,000 | 250,000 | 4 | * | ..... | ..... | ..... |
| 40 | Emma, S. | Utah. | 625,000 | 500,000 | 125 | ..... | ..... | ..... | ..... |
| 41 | Emmons, S. L. | Colo.. | 2,000,000 | 2 000,000 | 1 | ..... | ..... | ..... | ..... |
| 42 | Empire, S. | Utah. | 10,000,000 | 100,000 | 100 | ..... | ..... | ..... | ..... |
| 43 | Eureka Tunnel, S. L. | Nev... | 10,000,000 | 100,000 | 100 | * | ..... | ..... | ..... |
| 44 | Exchequer, S. G. | Nev... | 10,000,000 | 100,000 | 100 | 940,000 | Jan.. | 1892 | .25 |
| 45 | Found Treasure, G. S. | Nev... | 10,000,000 | 100,000 | 100 | 130,500 | Jan.. | 1892 | .50 |
| 46 | Gogebic I. Syn., I. | Wis.. | 5,000,000 | 200,000 | 25 | ..... | ..... | ..... | ..... |
| 47 | Gold Cup, S. | Colo.. | 500,000 | 500,000 | 1 | * | ..... | ..... | ..... |
| 48 | Golden Era, S. | Mont. | 1,000,000 | 200,000 | 10 | * | ..... | ..... | ..... |
| 49 | Gold Flat, G. | Cal | 1,000,000 | 100,000 | 10 | 5,000 | Mar.. | 1892 | .05 |
| 50 | Gold Rock, G. | Cal.. | 1,000,000 | 500,000 | 2 | ..... | ..... | ..... | ..... |
| 51 | Golden Feather C. h., G | Cal... | 900,000 | 180,000 | 5 | ..... | ..... | ..... | ..... |
| 52 | Goodyear, G. S. L. | Mont. | 1,000,000 | 200,000 | 5 | 13,000 | Feb.. | 1892 | .01 |
| 53 | Grand Duke, S. | Colo. | 800,000 | 80,000 | 10 | ..... | ..... | ..... | ..... |
| 54 | Gregory Con., G. | Mont. | 3,000,000 | 300,000 | 10 | ..... | ..... | ..... | ..... |
| 55 | Harlem M. & M. Co., G. | Cal... | 1.000,000 | 200,000 | 5 | ..... | ..... | ..... | ..... |
| 56 | Hartery Con., G. | Cal... | 1,000,000 | 100,000 | 10 | 22,000 | Oct.. | 1890 | .05 |
| 57 | Hartshorn, g. s. l. | S. Dak | 1,250,000 | 250,000 | 5 | 8 750 | Sept. | 1891 | .00¾ |
| 58 | Head Cent. & Tr., S. G | Ariz.. | 10,000,000 | 100,000 | 100 | 16,981 | Mar.. | 1892 | .08 |
| 59 | Hector, G. | Cal... | 1,500,000 | 300,000 | 5 | 45,000 | Jan.. | 1889 | .15 |
| 60 | Himalaya, G. S. L. | Utah. | 1,800,000 | 80,000 | 10 | 12,800 | Oct.. | 1892 | .00¾ |
| 61 | Holywood | Cal... | 200,000 | 100,000 | 2 | ..... | ..... | ..... | ..... |
| 62 | Huron, C. | Mich.. | 1,000,000 | 40,000 | 25 | 280,000 | May. | 1887 | 3.00 |
| 63 | Idaho, G. S. | Idaho | 1,250,000 | 250,000 | 5 | ..... | ..... | ..... | ..... |
| 64 | Ingalls, G. | Colo.. | 100,000 | 20,000 | 5 | ..... | ..... | ..... | ..... |
| 65 | Ironton, L. | Wis.. | 1,000,000 | 40,000 | 25 | ..... | ..... | ..... | ..... |
| 66 | Iroquois, C. | Mich. | 1,?50,000 | 50,000 | 25 | ..... | ..... | ..... | ..... |
| 67 | Kentuck Con. | Nev.. | 10,500,000 | 105,000 | 00 | 57,750 | July | 1892 | .10 |
| 68 | Julia Con., G. S. | Nev... | 11,000,000 | 110,000 | 100 | 1,463,000 | Jan. | 1889 | .10 |
| 69 | Justice, G. S. C. | Colo. | 500,000 | 500,000 | 1 | * | ..... | ..... | ..... |
| 70 | Lacrosse, G. | Colo.. | 1,000,000 | 100,000 | 10 | * | ..... | ..... | ..... |
| 71 | Little Josephine, S. | Colo.. | 250,000 | 50,000 | 5 | ..... | ..... | ..... | ..... |
| 72 | Lone Star Cons., G. | Cal... | 500,000 | 500,000 | 1 | 10,000 | April | 1892 | .60¾ |
| 73 | Madeleine, G. S. L. | Colo.. | 750,000 | 50,000 | 1 | 4,500 | Feb. | 1892 | .06¾ |
| 74 | Mammoth Gold, G. | Ariz.. | 2,500,000 | 500,000 | 5 | * | ..... | ..... | ..... |
| 75 | Mayflower Gravel, G. | Cal... | 1,000,000 | 100,000 | 